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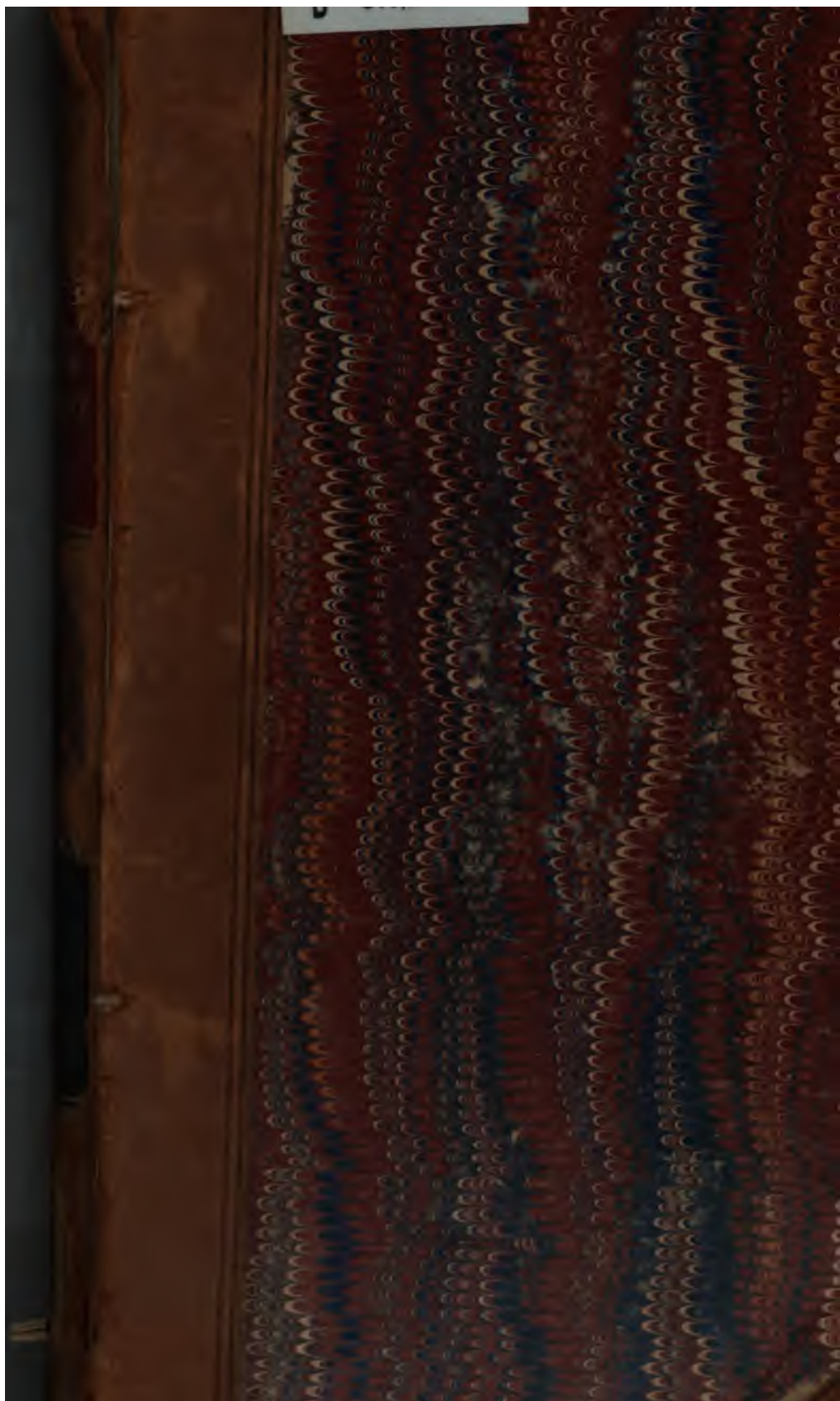
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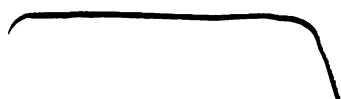
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December, 1885

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ANNUAL REPORT

25507

OF THE

SECRETARY OF THE NAVY

FOR

THE YEAR 1884.

IN TWO VOLUMES.

VOLUME II.

WASHINGTON:
GOVERNMENT PRINTING OFFICE.
1884.

REPORT
OF THE
SURGEON-GENERAL OF THE NAVY
FOR
THE YEAR 1883.



WASHINGTON:
GOVERNMENT PRINTING OFFICE.
1884.

REPORT

OF THE

CHIEF OF THE BUREAU OF MEDICINE AND SURGERY.

NAVY DEPARTMENT,
BUREAU OF MEDICINE AND SURGERY,
Washington, D. C., November 1, 1884.

SIR: I have the honor to submit the annual report of this Bureau, together with estimates of the amounts required for the fiscal year ending June 30, 1886.

The tabular statements of sick, &c., have been compiled from the reports of sick from the several naval stations within the United States and from vessels on the home and foreign stations for the year ending December 31, 1883. The ratio of the mortality for the year 1883 is 4.55 per thousand of force. This is a very slight increase over the average mortality of previous years, the mean death rate for the last fifteen years being 4.40 per thousand. There is a notable absence of any epidemic influences as increasing the ratio of death.

GENERAL AGGREGATE.

[Total force afloat, 2,874.]

Classification of diseases.	Remaining from last year.	Admitted.	Discharged to duty.	Invalided.			Remaining at the end of the year.	Total number of sick-days.
				To hospital.	From service.	Died.		
Zymotic diseases.....	10	1,110	994	99	.....	13	15	6,273
Constitutional diseases.....	32	984	803	184	8	1	20	10,618
Diseases of the nervous system.....	8	489	414	66	8	5	4	3,095
Diseases of the eye.....	3	117	97	19	12	.....	2	1,103
Diseases of the ear.....	.....	53	48	4	1	.....	.....	385
Diseases of the teeth.....	.....	25	25	.....	.....	.....	.....	75
Diseases of the circulatory system.....	2	68	33	32	.....	4	1	1,028
Diseases of the respiratory system.....	23	902	782	123	3	6	11	7,523
Diseases of the digestive system.....	11	1,421	1,315	93	2	2	20	6,982
Diseases of the genito-urinary system.....	19	621	519	84	8	.....	29	7,808
Diseases of the locomotive system.....	2	45	34	9	.....	.....	4	699
Diseases of the integumentary system.....	19	888	861	27	.....	1	18	7,863
Diseases of the absorbent system.....	6	150	123	24	1	.....	8	3,099
Non-malignant tumors and cysts.....	.....	13	8	5	.....	.....	.....	128
Poisons.....	4	144	140	7	.....	.....	1	554
Violent diseases and deaths.....	33	1,517	1,425	74	1	14	36	12,683
Foigned diseases.....	.....	3	3	.....	.....	.....	.....	10
Total.....	172	8,550	7,624	850	34	45	169	60,926

REPORT OF VACCINATION.

	Successful.	Unsuccessful.
No evidence of previous examination.....	386	520
Presenting good cicatrices.....	1, 051	1, 560
Evidence of former attack of small-pox.....	22	137

AGE TABLE.

	15 to 25.	25 to 35.	35 to 45.	45 to 55.	Over 55.
Average number on board.....	4, 556	3, 319	1, 404	471	124
Number sick.....	4, 232	2, 744	1, 163	440	145

Daily average number of sick.....	191+
The daily average each case was under treatment.....	8+
Admissions per thousand of mean strength.....	888+
Invaliding per thousand of mean strength.....	89+
Deaths per thousand of mean strength.....	4+

Ratio per thousand of admissions for each class of disease.

Zymotic diseases.....	114
Constitutional diseases.....	103
Diseases of the nervous system.....	50
Diseases of the eye.....	12
Diseases of the ear.....	5
Diseases of the teeth.....	2
Diseases of the circulatory system.....	7
Diseases of the respiratory system.....	94
Diseases of the digestive system.....	145
Diseases of the genito-urinary system.....	65
Diseases of the locomotive system.....	4
Diseases of the integumentary system.....	92
Diseases of the absorbent system.....	15
Non-malignant tumors and cysts.....	1
Poisons.....	15
Violent diseases and deaths.....	157
Feigned diseases.....	0. 3

Estimates of appropriations required for the service of the fiscal year ending June 30, 1886, by the Bureau of Medicine and Surgery.

Detailed objects of expenditure, and explanations.	Estimated amount which will be required for each detailed object of expenditure.	Amount appropriated for the current fiscal year ending June 30, 1885.
<i>Salaries.</i>		
*Chief clerk (act of July 7, 1884), R. S., p. 185.....	\$1, 800 00	
One clerk of class three (same act), R. S., p. 185.....	1, 600 00	
One clerk of class two (same act), R. S., p. 185.....	1, 400 00	
One clerk of class one (same act), R. S., p. 185.....	1, 200 00	
One clerk (same act), R. S., p. 185.....	1, 000 00	
One assistant messenger (same act), R. S., p. 185.....	720 00	
One laborer (same act), R. S., p. 185.....	660 00	
One janitor for Naval Dispensary (same act), R. S., p. 185.....	600 00	
One laborer for Naval Dispensary (same act), R. S., p. 185.....	480 00	
One clerk of class one, for service in pension division of Bureau, submitted..	1, 200 00	
	10, 660 00	\$9, 460 00

*The chief of the Bureau of Medicine and Surgery concurs with the chiefs of the other Bureaus of the Navy Department in recommending an increase of \$450 in the pay of chief clerk.

NOTE.—The additional clerk for service in pension division of Bureau was estimated for last year. The need of additional service is becoming more urgent.

Estimates of appropriations required for the service of the fiscal year, &c.—Continued.

Detailed objects of expenditure, and explanations.	Total amount to be appropriated under each head of appropriation.	Amount appropriated for the six months ending December 31, 1884.
<i>Medical Department and Civil Establishment.</i>		
For surgeon's necessities for vessels in commission, navy-yards, naval stations, Marine Corps and Coast Survey, and for the Civil Establishment at the several naval hospitals, navy-yards, Naval Laboratory and Naval Academy. [Vol. 22, p. 476, sec. 1. Appropriated P. E. Stat., p. 262, sec. 1.]...	\$60,000 00	\$30,000 00
<i>Naval Hospital Fund.</i>		
For the maintenance of the naval hospitals at Portsmouth, N. H., Chelsea, Mass., Brooklyn, N. Y., Philadelphia, Pa., Annapolis, Md., Washington, D. C., Norfolk, Va., Pensacola, Fla., Mare Island, Cal., and Yokohama, Japan. [Vol. 22, p. 476, sec. 1. Appropriated P. E. Stat., p. 262, sec. 1.]	30,000 00	15,000 00
<i>Contingent, Bureau of Medicine and Surgery.</i>		
For contingent expenses of the Bureau; for freight or expressage on medical stores, toll, ferriage, and car tickets; transportation of insane patients; advertising; telegraphing; rent of telephones; purchase of books; postage and purchase of stamps for foreign service; expenses attending the medical board of examiners; rent of rooms for Naval Dispensary and Museum of Hygiene; hygienic and sanitary investigation and illustration; sanitary and hygienic instruction; purchase and repair of wagons and harness; purchase and feed of horses and cows; trees, plants, garden tools and seeds, furniture and incidental articles for Museum of Hygiene, Naval Dispensary Washington, Naval Laboratory, sick quarters at Naval Academy, and dispensaries at navy-yards; washing for medical department at museum of Hygiene, Naval Dispensary Washington, Naval Laboratory, sick quarters at Naval Academy, dispensaries at navy-yards, and for receiving ships and rendezvous. [Vol. 22, p. 476, sec. 1. Appropriated P. E. Stat., p. 262, sec. 1.]	25,000 00	12,500 00
<i>Repairs, Bureau of Medicine and Surgery.</i>		
For necessary repairs of Naval Laboratory, naval hospitals and appendages, including roads, wharves, out-houses, sidewalks, fences, gardens, farms, and cemeteries. [Vol. 22, p. 476, sec. 1. Appropriated P. E. Stat., p. 262, sec. 1.]	20,000 00	7,500 00

INSANE OF THE NAVY.

There were in the Government Hospital for the Insane, in this District, September 30, 1883 :

Lieutenant-commanders (retired)	3	Landsmen	8
Passed assistant surgeon (retired)	1	Coal-heaver	1
Passed assistant engineer (retired)	1	Privates of marines	19
Assistant engineer (retired)	1	Late private of marines	1
Late acting ensign	1	Bugler	1
Late boatswain's mate	1	Beneficiaries	2
Seamen	10	Second-class boy	1
Late seaman	1	Third-class boys	2
Seaman (extra fireman)	1	Late third-class boy	1
Ordinary seamen	2		
Ordinary seamen (extra firemen)	2	Total	60

Admitted during the year ending September 30, 1884.

Commander	1	Late landsman (act of August 7, 1882)	1
Seaman	1	Late second-class fireman (act of August 7, 1882)	1
Late seaman (under act of August 7, 1882)	1	Corporal of marines	1
Ordinary seamen	2	Beneficiary	1
Late ordinary seaman (act of August 7, 1882)	1		
Landsman	1	Total	11

Discharged during the year ending September 30, 1884.

Commander (on trial).....	1	Corporal of marines	1
Late boatswain's mate.....	1	Private of marines	1
Seamen	2	Third-class boy.....	1
Landsman	1		
Coal-heaver.....	1	Total	9

Those remaining at the end of the year, September 30, 1884, were :

Lieutenant-commanders (retired)	3	Landsmen	8
Passed assistant surgeon (retired)....	1	Late landsman	1
Passed assistant engineer (retired)....	1	Privates of marines.....	18
Assistant engineer (retired).....	1	Late private of marines	1
Late acting ensign	1	Bugler (Marine Corps).....	1
Seamen	9	Beneficiaries	3
Late seamen	2	Second-class boy	1
Seaman (extra fireman).....	1	Third-class boy.....	1
Ordinary seamen	4	Late third-class boy	1
Late ordinary seaman	1		
Ordinary seamen (extra firemen).....	2	Total	62
Late second-class fireman.....	1		

NAVAL HOSPITAL FUND.

The condition of this fund is as follows :

Balance on hand October 1, 1883.....	\$131,870 26
Transferred to the credit of the fund by the Fourth Auditor, since October 1, 1883.....	48,095 33
Credit by appropriation for six months ending December 31, 1884.....	15,000 00
Total	194,965 59
Deduct amount expended from October 1, 1883, to October 1, 1884	105,271 69
Balance on hand October 1, 1884.....	89,693 90

NAVAL HOSPITALS.

The several naval hospitals at Chelsea, New York, Philadelphia, Norfolk, Washington, and at Mare Island, California, have been kept in as efficient condition as the limited appropriation for repairs of hospitals would permit. Serious embarrassments have arisen from the insufficient number of employés to tend the sick, and to take care of the buildings and grounds.

A change in the manner of appropriating money for civil establishments has, with your approval, been suggested to the appropriation committees of Congress and accepted by them, which it is hoped may be followed hereafter.

The selections for the locations of these hospitals were carefully and judiciously made before their erection and they answer thoroughly well the intended objects, being both the sick quarters of their stations and convenient places to receive the sick from vessels arriving from sea. It would be impossible to replace these valuable establishments without enormous outlays of money to procure desirable sites and erect the necessary buildings thereon.

An increase in the accommodations for the sick at Portsmouth, N. H., has been asked for several years past. The plan suggested by Medical Inspector Cleborne in 1879 seems to be the best that can be adopted. With your approval I have requested the chief of Bureau of Yards and Docks to transfer to the hospital inclosure the adjoining ground and the paint-shop, which will afford two desirable hospital wards and enable the drains of the hospital to reach the river below.

The present condition of these drains is most objectionable, and if they cannot be discharged into the river as proposed, the quarters will have to be abandoned.

QUARANTINE STATION.

The residents near Portsmouth, N. H., having addressed you an earnest protest against the presence of infected vessels in their harbor, I proceeded by your instructions, in August last, to look for a desirable location among the islands on the coast of Maine.

The Light-House Board, on my application to Commander Picking, lately inspector of that district, for information about the coast, tendered us the use of Widow's Island, in Penobscot Bay. Commander Crowninshield met me at Rockland and took me in the steamer *Iris* to visit this island and the line of coast to Mount Desert.

I find the island and location well suited for the purposes of a quarantine station. It is about fifteen acres in extent, easily accessible from the sea, and has safe anchorage. The village of Vinal Haven, in "Fox Island Thoroughfare," is about three miles away, and boatmen there will undertake to furnish fresh supplies to the station. The city of Rockland is distant about twelve miles only, and a steam tug stationed there could be used to keep up communication, by agreement with the health officers of the town.

To build a wharf, dig a well to supply fresh water (which was not found during our exploration), and to erect a small pavilion hospital with necessary offices, the sum of \$5,000 will be required. Very simple constructions of boards and canvas will be sufficient to protect the crew of an infected vessel at a safe distance from the hospital building.

After the buildings are erected it will be necessary to employ a keeper to protect the property when not occupied by the sick. On the arrival of an infected vessel, with yellow fever, for example, the charge of the island and anchorage will be turned over to the officers of the vessel and the keeper withdrawn. Additional medical assistance and supplies can be furnished from Portsmouth in a few hours.

MUSEUM OF HYGIENE.

The Museum of Hygiene is supplied with suitable furniture for present demands, and is provided with a water service, so as to enable various forms of sanitary apparatus to be tested, and a large number are exhibited in action.

The collection of articles, plans, &c., is arranged under the divisions of "hygiene of civil life," "hygiene of private life," and "military and naval hygiene," and these are subdivided.

During the year 240 articles for exhibition have been received, giving a total of 650 in the collection.

The number of bound volumes added to the library during the year is 1,839, the total number being 7,049. This is exclusive of many duplicates and 101 bound volumes of pamphlets. The periodicals (separate titles), most of which are contributed, amount to 131.

The experimental laboratory connected with the Museum has all requisite apparatus for work, both in organic and inorganic chemistry; also apparatus designed for special investigation, as Koch's, for germ culture; Hemple's gas apparatus; Winkler's gas apparatus, and that of J. Burdon-Sanderson for physiological experiments, together with the spectroscope, polariscope, photometer, and other special instruments. The enumerated articles, except that of Burdon-Sanderson, have been recently received.

Connected with the laboratory is the division of microscopy, which is essentially complete in outfit. Photomicrographic work, as well as ordinary photography, can be done with complete apparatus.

During the past year nearly three hundred examinations have been made in the laboratory, and many microscopic specimens of morbid tissues examined, permanently mounted, and reported during this time.

A descriptive catalogue (with illustrations) is nearly ready for the printer. The delay in having the catalogue of books printed (owing to the amount of work at the Government Printing Office) has afforded an opportunity for revision, which will be made as soon as the small working force available can accomplish it.

The purchase of certain articles now in the International Health Exhibition, London, has been ordered for the museum, including the apparatus designed by Mr. Francis Galton for anthropometrical examinations.

GREELY RELIEF EXPEDITION.

It is a pleasant privilege to congratulate you officially on the perfect success of the Greely Relief Expedition, and to be able to commend fully the part taken therein by the medical officers. Their outfit was as complete as could be desired for such exceptionally difficult service.

INVESTIGATION OF BUREAU.

On the appointment of Surgeon William K. Van Reypen to be acting chief of Bureau, February 7 1884, you directed him to make an examination of the records of the Bureau, and to report to you any evidence of irregularity or mismanagement of its affairs, of which some rumors had reached you, and subsequently he was instructed to assist the district attorney in comparing the paid vouchers of this Bureau in the office of the Fourth Auditor of the Treasury with the record of bills and payments in the Bureau. The result has been the discovery of a large number of fraudulent vouchers, amounting to many thousand dollars. The examination of the business of the office has continued until the present time and is still in progress, and it is not yet possible to state what is the sum of the loss to the Government.

Many of these vouchers are evidently and entirely fraudulent, being for articles never needed nor delivered. Others appear to have been raised in amount after passing through the office in regular form of approval for some articles actually ordered for purchase.

From the records of the office it appears that since February 1880, all purchases have been made directly by the Bureau, and the neglect of the usual precaution of requiring from an inspecting and receiving officer the certificate on the face of public bills, of the delivery of goods, &c., has afforded the principal opportunity for such plunder.

Since my appointment to the office on March 28th last, I have, with the efficient assistance of Dr. Van Reypen and with the benefit of his experience during his charge of the Bureau, examined carefully into its management and have adopted under your instructions, and after conference with the Second Comptroller and Fourth Auditor of the Treasury, every method of precaution in making purchases and procuring certification of inspection and receipt from responsible officers, that seems to be necessary to secure the best expenditure of appropriations for their specific objects, and to protect the Government against fraud and loss. The investigation of the condition of the Bureau by the Board appointed by you for the purpose has not suggested any fault in its management under the present methods.

STATISTICAL REPORTS OF BUREAU.

For many years the Bureau has published careful statistics of the health of the Navy and the character and distribution of its diseases in all parts of the world. In Dr. Horwitz's service as chief of Bureau, from 1865 to 1869, very interesting and valuable abstracts of the diseases and surgical injuries of our large squadrons upon the coasts and in the rivers of the country during the late war were prepared and published with the annual report. In 1870 Surgeon T. J. Turner prepared for Dr. William M. Wood, the first surgeon-general of the Navy, an admirable form of statistical report with accompanying sanitary notes, which has been followed in subsequent reports of this office, with such additions and expansions as have suggested themselves to the succeeding chiefs of Bureau, who have generally shown full appreciation of the value and extent of the sanitary studies and recorded observations of the officers of their Department.

Dr. Wood also issued in 1870 instructions to medical officers, to send from every vessel in commission and from each naval station, at home and abroad, in addition to their quarterly returns and yearly abstracts of diseases and injuries, full sanitary reports of the posts and the places visited, with all matters of interest concerning the origin of diseases and the most judicious modes of providing protection against them, as well as of their treatment; and for fourteen years past, "from every sea and shore," have come the interesting and valuable returns which have furnished the yearly volume of sanitary reports issued by the Bureau. The effect of such a system, in arousing interest in the pursuit of professional subjects and in developing the faculties of observation and research, cannot be too highly estimated. The study of sanitary science and its practical applications to the care of naval ships and stations has occupied the best minds of the medical officers of the Navy for many years, and the results have been fully shown in the good condition of the crews of our vessels of all classes in our late war and in the wide distribution of our cruisers about the world.

In very recent years the additions to the contents of the yearly reports have rendered the volume more bulky and expensive than the value of the very minute statistical comparisons and computations would seem to authorize, and, at my request, Doctor Turner has reduced the statistical report to the facts of real value and interest to the medical department, in accordance with his original plan.

POST-GRADUATE COURSE.

For many years the Bureau has been impressed with the necessity for post-graduate instruction for our young medical officers, not only to prepare them for the intelligent treatment of the sick and wounded of the Navy, under ordinary circumstances, but to instruct them in the special diseases of shipboard and of the various climates of the world, and in the still more important matters which relate to the protection of the vessels and stations from the approaches of disease from without, and from the causes which develop it within their limits; and repeated efforts have been made to establish some form of school or instruction in the medical department. These have not been as successful as was desired. At present the opportunity is afforded, by the establishment of polyclinic courses at the great medical centers of New York, Boston, and Philadelphia, to procure most thorough instruction in every department of medicine and surgery, and in the allied scientific branches.

The Navy Department has exhibited much generosity in procuring for its officers all possible privileges of post-graduate education at Annapolis, at the torpedo station, and more recently in the installation of the college at Coaster's Island. It cannot be less important that our younger medical officers should enjoy similar advantages at the polyclinic schools. I have to recommend, therefore, that tickets for the principal subjects of the courses—three months each—shall be purchased, so as to enable a certain number of officers to attend the instruction during the winter and spring months. At my request, the three medical officers attached to the Greeley relief vessels are now, at their own expense, attending selected courses on subjects of principal interest to them, but I regret that I am not enabled to provide them with tickets for the full course.

Very respectfully, your obedient servant,

F. M. GUNNELL,

Surgeon-General United States Navy.

Hon. WILLIAM CHANDLER,

Secretary of the Navy.

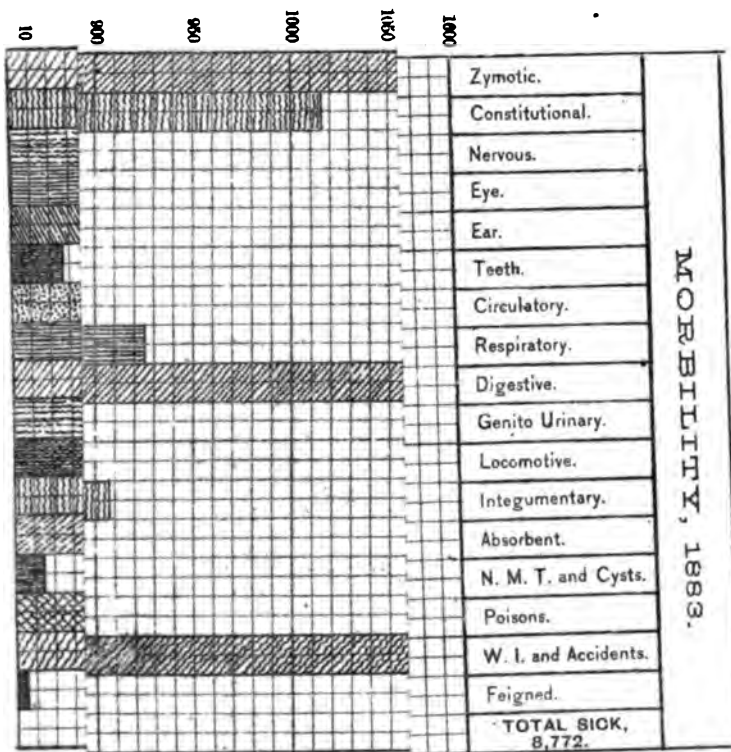
GENERAL SICK-REPORT OF VESSELS.

From the *incomplete* returns for the year 1884, it appears that in the examination of 1,272 persons 52 are reported as rejected for color-blindness, (4.08 per cent.)

GENERAL SUMMARY—Continued.

Diseases.	Remaining from last quarter.	Admitted.	Discharged to duty.	Invalided.		Died.	Continued to next quarter.	Total number of sick-days.
				To hospital.	From service.			
LOCAL DISEASES—Continued.								
<i>Diseases of the integumentary system—Continued.</i>								
Dermatitis.....	1	1	2					2
Drananculus.....		2	2					8
Ecthyma.....		3	2	1				11
Eczema.....	1	26	25	12				273
Erythema.....		3	3					6
Furunculus.....	2	357	349	2			8	1,955
Herpes.....		12	11	1				109
Impetigo.....		2	2	1				106
Lichen.....		5	5					30
Oncychia.....	1	11	11	1				79
Paronychia.....	1	49	48				2	555
Pemphigus.....	1		1					3
Perrnio.....		2	2					11
Psoriasis.....		1		1				2
Scabies.....		2	2					7
Sycosis.....		1	1					16
Ulcus.....	4	116	104	11			5	1,687
Unguis involutus.....	1	9	10					134
Urticaria.....		14	14					56
Verruca.....		1	1					10
<i>Diseases of the absorbent system.</i>								
Adenitis.....	6	149	122	24	1		8	3,085
Lymphangitis.....		1	1					14
<i>Non-malignant tumors and cysts.</i>								
Adenoma.....		1		1				1
Condyloma.....		1	1					2
Cystis.....		5	4	1				51
Lipoma.....		2	1	1				32
Lupus.....		1	1					25
Osteoma.....		2		2				2
Polypus.....		1	1					15
POISONS.								
Alcoholismus acutus.....	4	126	125	4			1	401
Alcoholismus chronicus.....		3	2	1				14
Colica pictonum.....		1	1					10
Delirium tremens.....		1		1				21
Venena.....		1	1					7
Vulnus venenatum.....		12	11	1				101
VIOLENT DISEASES AND DEATHS.								
Abrasio.....		70	67				3	517
Ambustio.....	1	59	55	3		1	1	595
Concussio cerebri.....		17	12	2		3		214
Concussio spinalis.....		1				1		1
Congelatio.....		2	2					2
Contusio.....	7	426	422	9			2	2,601
Explosio.....		4	2	1			1	43
Fractura.....	2	64	26	33		2	5	1,140
Luxatio.....		18	15	1			2	181
Stremma.....	14	343	338	11			8	2,529
Submersio.....		4				4		4
Suicidium.....		1				1		1
Vulnus contusum.....	3	192	183	5	1		6	1,712
Vulnus incisum.....	2	134	130	2			4	1,149
Vulnus laceratum.....	4	108	105	5			2	1,452
Vulnus punctum.....		66	64				2	465
Vulnus sclopetarium.....		8	4	2		2		77
FEIGNED DISEASES.								
Lumbago.....		2	2					9
Vertigo.....		1	1					1
Total.....	172	8,550	7,624	850	34	45	169	69,926

stive.	Genito Urinar	Feigned.
L. 1422.	TOTAL 640	TOTAL 3.



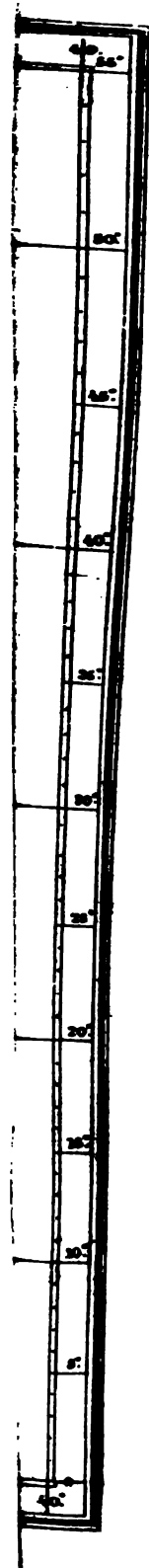
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GENERAL SUMMARY—Continued.

Diseases.	Discharged from last quarter.	Admitted.	Returned to duty.	Invalided.			Number of sick days.
				Pital.	Service.	Returned to next quarter.	
<i>Vulnus punctum</i>	66	64	0	0	0	2	1,452
<i>Vulnus sclopetarium</i>	8	4	2	0	0	2	465
FEIGNED DISEASES.							
Lumbago.....	2	2	0	0	0	0	9
Vertigo.....	1	1	0	0	0	0	1
Total.....	172	8,550	7,624	850	34	45	169
							69,926

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SANITARY CONDITION
OF THE
NORTH ATLANTIC SQUADRON.



THE NORTH ATLANTIC SQUADRON.

The vessels employed upon this station were the Tennessee (flag-ship), Ajax, Alarm, Alliance, Albatross, Bache, Constellation, Colorado, Despatch, Dale, Franklin, Fish-Hawk, Gedney, Jamestown, Kearsarge, Minnesota, Miantonomoh, Michigan, New Hampshire, Powhatan, Portsmouth, Pinta, Shenandoah, Swatara, Saratoga, St. Louis, Tallapoosa, Vandalia, Wabash, Wyandotte, and Yantic.

The total force employed was 4,707. The loss of strength of the total force was, *a*, from invaliding 552, or at the rate of 117 per 1,000; *b*, from deaths 17, or at the rate of 3 per 1,000.

The loss of effective force represented by the number of cases treated was 4,282, with 29,786 sick-days, giving an average of 6 + days for each case, with a daily average number of sick of 81+.

The admissions for treatment per 1,000 of the mean strength was at the rate of 909 +, and the following table presents the ratio per 1,000 for each class of diseases:

Total force.....	4,707
Admissions per 1,000	909
Zymotic diseases	121+
Constitutional diseases.....	95+
Diseases of the nervous system	47+
Diseases of the eye.....	12+
Diseases of the ear	5+
Diseases of the teeth	1+
Diseases of the circulatory system	6+
Diseases of the respiratory system	110
Diseases of the digestive system	161+
Diseases of the genito-urinary system	61+
Diseases of the locomotive system	4+
Diseases of the integumentary system	96+
Diseases of the absorbent system	12+
Non-malignant tumors and cysts.....	2+
Poisons	10+
Violent diseases and deaths.....	159+

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SUMMARY NORTH ATLANTIC STATION.

[Total force, 4,707.]

Classification of diseases.	Remaining from last year.	Admitted.	Discharged to duty.	Invalided.		Died.	Remaining at the end of the year.	Total number of sick-days.
				To hospital.	From service.			
Zymotic diseases	4	566	491	71		2	6	3,826
Constitutional diseases	5	445	327	115	2		6	3,944
Diseases of the nervous system	1	223	188	29	3	2	2	997
Diseases of the eye	1	56	46	10			1	393
Diseases of the ear		27	26	1				228
Diseases of the teeth		9	9					27
Diseases of the circulatory system		29	10	17		1	1	266
Diseases of the respiratory system	10	508	430	78	3		7	3,847
Diseases of the digestive system	5	756	704	49	2	1	5	3,588
Diseases of the genito-urinary system	5	286	219	58	8		6	3,038
Diseases of the locomotive system	1	20	14	7				343
Diseases of the integumentary system	12	444	426	23			7	3,611
Diseases of the absorbent system	3	54	40	15			2	626
Non-malignant tumors and cysts		12	7	5				103
Poisons	2	47	45	3			1	178
Violent diseases and deaths	17	734	674	55	1	8	13	5,771
Total	66	4,216	3,656	536	16	17	67	29,786

REPORT OF VACCINATION.

	Successful.	Unsuccessful.
No evidence of previous examination	300	373
Presenting good cicatrices	907	1,141
Evidence of former attack of small-pox	19	50

AGE TABLE.

	15 to 25.	25 to 35.	35 to 45.	45 to 55.	Over 55.
Average number on board	2,266	1,412	696	260	73
Number sick	2,408	1,106	456	231	81

DETAILED STATEMENT.

Diseases.	Remaining from last quarter.	Admitted.	Discharged to duty.	Invalided.		Died.	Continued to next quarter.	Total number of sick- days.
				To hospital.	From service.			
GENERAL DISEASES.								
Zymotic diseases.								
Catarrhus epidemicus		4	3	1				14
Diphtheria		1		1				1
Erysipelas		17	10	7				108
Febricula		55	54	1				177
Febris continua simplex		47	42	4		1		205
Febris enterica		8		8				30
Febris intermittens	1	305	278	27			1	1,868
Febris remittens	1	55	45	9		1		467
Morbilli		4	1	2			1	18

DETAILED STATEMENT—Continued.

Diseases.	Remaining from last quarter.	Admitted.	Discharged to duty.	Invalided.		Died.	Continued to next quarter.	Total number of sick-days.
				To hospital.	From service.			
GENERAL DISEASES—Continued.								
Zymotic diseases—Continued.								
Parotitis.....		27	19	5			3	162
Roseola.....		1	1					11
Scarlatina.....		3		3				3
Vaccina.....	2	36	37	1				265
Variola.....		1		1				1
Varioloides.....		1		1				1
Catarrhus.....		1	1					3
Constitutional diseases.								
Adynamia.....		58	39	18			1	294
Anæmia.....		7	4	3				88
Diabetes.....		5	3	2				41
Lumbago.....	1	40	39	2				169
Myalgia.....		3	3					20
Podagra.....		11	11					52
Rheumatismus acutus.....	1	124	102	19	1		3	1,156
Rheumatismus chronicus.....	1	83	65	18			1	820
Rheumatismus gonorrhoeicus.....		2	1	1				16
Scrofula.....		2	1	1				19
Senectus.....		1		1				4
Syphilis consecutiva.....	2	63	33	30	1		1	821
Syphilis primitiva.....		43	23	20				434
Torticollis.....		3	3					10
LOCAL DISEASES.								
Diseases of the nervous system.								
Apoplexia.....		2		1		1		2
Cephalalgia.....		34	33	1				89
Cerebritis.....		1	1					3
Convulsio.....		2	2					7
Dementia.....		3		2	1			43
Epilepsia.....		22	11	9	2			96
Insectio.....		3	3					51
Irritatio spinalis.....		1	1					3
Mania.....		2		2				28
Melanpholia.....		3		3				27
Meningitis.....		1				1		2
Myelitis.....		3	2	1				8
Nausea marina.....		38	38					97
Neuralgia.....	1	76	68	7			2	377
Paralysis.....		3	2	1				21
Pleurodynia.....		15	14	1				86
Sciatica.....		3	3					18
Vertigo.....		11	10	1				46
Diseases of the eye.								
Amaurosis.....	1	2		3				31
Cataracta.....		1	1					28
Conjunctivitis.....		26	23	2			1	169
Hordeolum.....		6	6					15
Iritis.....		8	7	1				95
Keratitis.....		1	1					2
Myopia.....		1	1					3
Ophthalmia.....		2	1	1				2
Pterygium.....		2		2				2
Retinitis.....		2	1	1				3
Ulcus cornæ.....		3	5					43
Diseases of the ear.								
Otalgia.....		7	7					63
Otitis.....		13	13					63
Otorrhœa.....		6	5	1				97
Surditas.....		1	1					5
Diseases of the teeth.								
Odontalgia.....		7	7					24
Parulis.....		2	2					9

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DETAILED STATEMENT—Continued.

Diseases.	Remaining from last quarter.	Admitted.	Discharged to duty.	Invalided.		Died.	Continued to next quarter.	Total number of sick days.
				To hospital.	From service.			
LOCAL DISEASES—Continued.								
<i>Diseases of the circulatory system.</i>								
Angina pectoris		2	1	1				17
Endocarditis		1					1	19
Hydrops pericardii		1		1				5
Morbi valvularum cordis		7		6		1		14
Palpitatio		16	9	7				207
Varix		2		2				4
<i>Diseases of the respiratory system.</i>								
Asthma	1	11	9	3				43
Bronchitis acuta	7	217	199	22			3	1,462
Bronchitis chronica	1	45	33	12			1	579
Catarrhus bronchialis		119	114	4			1	452
Catarrhus nasalis		11	11					49
Hæmoptysis		9	6	2			1	168
Laryngitis		23	21	1			1	116
Phthisis pneumonica acuta		1	1					26
Phthisis pneumonica chronica		19	2	17				188
Pleuritis		20	14	6				250
Pneumonia	1	31	19	11		2		520
Pneumo-thorax		1	1					44
Pulmonary apoplexy		1				1		1
<i>Diseases of the digestive system.</i>								
Cholera morbus		17	17					49
Colica		73	71	2				17
Congestio hepatis		2	2					16
Constipatio		22	20	2				70
Diarrhœa acuta		173	168	5				682
Diarrhœa chronica		4	2	2				25
Dysenteria acuta		19	16	3				129
Dysenteria chronica		3		3				28
Dyspepsia		33	30	3				215
Enteritis		2	2					14
Fistula ani		3	1	2				47
Gastritis		6	5				1	78
Gastrodynia		2	2					9
Hæmatemesis		2	1	1				7
Hæmorrhoids	1	20	16	4	1			135
Hepatitis acuta		4	3	1				30
Hepatitis chronica		2	1	1				50
Hernia		18	8	9	1			183
Icterus		7	6	1				48
Peritonitis		1				1		1
Pharyngitis	2	86	88					347
Rhagades ani		1	1					7
Tonsillitis	2	239	228	9			4	1,132
Verues		15	15					66
Typhilitis		1		1				7
Hæmorrhage from bowels		1	1					10
<i>Diseases of the genito-urinary system.</i>								
Albuminuria		2	1	1				66
Balanitis	1	5	5	1				43
Calculus		2	2					7
Chaneroides		33	19	11			3	329
Cystitis	1	9	6	4				62
Dysuria		1	1					6
Enuresis		13	8	1	4			221
Epididymitis		1	1					13
Gonorrhœa		133	110	19	3		1	1,440
Hæmaturia		1	1					5
Ischuria		2	2					3
Nephritis		4	1	3				63
Oorchitis	2	53	46	7			1	595
Paraphymosis		2	2					12
Phymosis	1	3	1	2			1	20
Prostatitis		2	1	1				10
Urethra strictura		12	6	6	1			52

DETAILED STATEMENT—Continued.

Diseases.	Remaining from last quarter.	Admitted.	Discharged to duty.	Invalided.		Died.	Continued to next quarter.	Total number sick-days.
			To hospital.	From service.				
LOCAL DISEASES—Continued.								
Diseases of the genito-urinary organs—Continued.								
Varicocele		7	6	1				53
Prostatic catarrh		1		1				1
Congestio. renalis		1	1					7
Diseases of the locomotive system.								
Hydrops articolorum		2	1	1				19
Periostitis		3	1	2				115
Synovitis	1	15	12	4				209
Diseases of the integumentary system.								
Abscessus	4	115	112	6			1	1,074
Acne		2	2					15
Anthrax		5	4	1				57
Clavus		3	3					25
Ecthyma		2	1	1				3
Eczema	1	13	12	2				167
Erythema		2	2					2
Furunculus	1	176	173	3			2	884
Herpes		7	6	1				54
Lichen		2	2					12
Onychia	1	10	10	1				67
Paronychia	1	25	26					330
Pernio		2	2					11
Psoriasis		1		1				2
Ulcus	3	65	56	8			4	766
Unguis involutus	1	5	6					95
Urticaria		6	6					29
Verruca		1	1					10
Dranunculus		2	2					8
Diseases of the absorbent system.								
Adenitis	3	54	40	15			2	626
Non-malignant tumors and cysts.								
Adenoma		1		1				1
Condyloma		1	1					2
Cystis		5	4	1				51
Lipoma		2	1	1				32
Osteoma		2		2				2
Polypus		1	1					15
POISONS.								
Alcoholismus acutus	2	40	39	2			1	131
Alcoholismus chronicus		1		1				2
Colica pictorum		1	1					10
Venena		1	1					7
Vulnus venenatum		4	4					28
VIOLENT DISEASES AND DEATHS.								
Abrasio		20	19				1	156
Amblytio	1	34	30	3		1	1	376
Concussio cerebri		10	7	1		2		59
Congelatio		2	2					2
Contusio	2	222	216	7			1	1,280
Fractura		38	11	24		1	2	451
Luxatio		8	7	1				30
Stremma	9	146	144	8			3	930
Submersio		3				3		3
Suicidium		1				1	1	1
Vulnus contusum	2	91	88	3	1		1	826
Vulnus incisum	1	66	63	2			2	622
Vulnus laceratum	2	60	56	5			1	779
Vulnus punctum		29	28				1	237
Vulnus sclopetarium		4	3	1				29
Total	66	4,216	3,656	536	16	17	57	29,786

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TENNESSEE.

[First rate; wood; screw; tons, 2,840; service, 365 days; strength, 450.]

Classification of diseases.	Remaining from last year.	Admitted.	Discharged to duty.	Invalided.		Died.	Remaining at the end of the year.	Total number of sick-days.
				To hospital.	From service.			
Zymotic diseases.....		54	53				1	254
Constitutional diseases.....		50	32	17			1	465
Diseases of the nervous system.....		15	11	4				86
Diseases of the eye.....		15	12	3				78
Diseases of the ear.....		3	3					13
Diseases of the circulatory system.....		6	4	1			1	34
Diseases of the respiratory system.....	1	51	42	9			1	382
Diseases of the digestive system.....		51	48	3				202
Diseases of the genito urinary system.....		26	21	4			1	240
Diseases of the locomotive system.....		3	3					17
Disease of the integumentary system.....	3	56	56	3				590
Diseases of the absorbent system.....	2	6	5	3				130
Non-malignant tumors and cysts.....		3	2	1				19
Poisons.....		3	1	2				4
Violent diseases and deaths.....	1	67	64	1		2	1	564
Total.....	7	408	357	50		2	6	3,018

NOTE.—This vessel was 288 days in port and 77 at sea. The average number of days each case was under treatment was 7.2, and the daily average number of sick 8.2. The deaths were 1 from concussion cerebri, and 1 from amblystio.

REPORT OF VACCINATION.

	Successful.	Unsuccessful.
No evidence of previous examination.....		4
Presenting good cicatrices.....	36	61
Evidence of former attack of small-pox.....	1	5

AGE TABLE.

	15 to 25.	25 to 35.	35 to 45.	45 to 55.	Over 55.
Average number on board.....	218	149	57	22	4
Number sick.....	201	130	51	30	3

DETAILED STATEMENT.

Diseases.	Remaining from last quarter.	Admitted.	Discharged to duty.	Invalided.		Died.	Continued to next quarter.	Total number of sick-days.
				To hospital.	From service.			
GENERAL DISEASES.								
<i>Zymotic diseases.</i>								
Febricula.....		11	11					22
Febris continua simplex.....		8	8					39
Febris intermittens.....		28	28					143
Febris remittens.....		6	5				1	44
Vaccina.....		1	1					6

DETAILED STATEMENT—Continued.

Diseases.	Remaining from last quarter.	Admitted.	Discharged to duty.	Invalided.		Died.	Continued to next quarter.	Total number of sick-days.
				To hospital.	From service.			
GENERAL DISEASES—Continued.								
<i>Constitutional diseases.</i>								
Adynamia		4	2	2				18
Anæmia		3	2	1				19
Diabetes		4	2	2				18
Lumbago		6	3					22
Podagra		3	3					12
Rheumatismus acutus		4	6	2			1	103
Rheumatismus chronicus		2	2					74
Rheumatismus subacutus		10	4	1				16
Rheumatismus gonorrhœicus		6	1	6				56
Syphilis consecutiva		2	3	3				63
Syphilis primitiva								4
LOCAL DISEASES.								
<i>Diseases of the nervous system.</i>								
Cephalalgia		1	1					5
Epilepsia		2	1	1				2
Melancholia		1		1				19
Myelitis		1		1				2
Neuralgia		7	6	1				39
Pleurodynia		2	2					14
Vertigo		1	1					5
<i>Diseases of the eye.</i>								
Conjunctivitis		3	3					11
Hordeolum		2	2					7
Iritis		3	3					47
Keratitis		1	1					2
Myopia		1		2				3
Pterygium		2	1	1				3
Retinitis		2	1	1				3
Ulcus corneæ		1	1					3
<i>Diseases of the ear.</i>								
Otalgia		2	2					9
Otitis		1	1					4
<i>Diseases of the circulatory system.</i>								
Endocarditis		1					1	19
Palpitatio		4	4					12
Varix		1		1				3
<i>Diseases of the respiratory system.</i>								
Bronchitis acuta		23	22				1	104
Bronchitis chronica		2	1	1				16
Catarrhus bronchialis		9	9					26
Hæmoptysis		1	1					2
Phthisis pneumonica chronica		5	1	4				61
Pleuritis		2	1	1				11
Pneumonia	1	9	7	3				162
<i>Diseases of the digestive system.</i>								
Cholera morbus		1	1					2
Colica		6	5	1				15
Diarrhœa acuta		15	15					38
Dyspepsia		2	2					5
Gastritis		1	1					4
Hernia		1		1				1
Icterus		2	2					22
Pharyngitis		4	4					25
Tonsillitis		16	16					81
Vermes		2	2					2
Typhlitis		1		1				7

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DETAILED STATEMENT—Continued.

Diseases.	Remaining from last quarter.	Admitted.	Discharged to duty.	Invalided.		Died.	Continued to next quarter.	Total number of sick-days.
				To hospital.	From service.			
LOCAL DISEASES—Continued.								
<i>Diseases of the genito-urinary system.</i>								
Chancroides		2	1	1				16
Cystitis		4	3	1				39
Gonorrhœa		8	8					82
Orchitis		6	5	1				85
Paraphymosis		1	1					7
Phymosis		1					1	2
Prostatitis		2	1	1				10
Urethræ strictura		2	2					8
<i>Diseases of the locomotive system.</i>								
Synovitis		3	3					17
<i>Diseases of the integumentary system.</i>								
Abscessus		13	12	1				178
Acne		1	1					6
Eczema	1	6	2	1				113
Erythema		2	2					2
Furunculus	1	24	24	1				144
Lichen		1	1					4
Onychia		1	1					13
Paronychia		4	4					37
Ulcus	1	4	5					93
<i>Diseases of the absorbent system.</i>								
Adenitis	2	6	5	3				130
<i>Non-malignant tumors and cysts.</i>								
Cystis		2	1	1				18
Lipoma		1		1				1
POISONS.								
Alcoholismus acutus		1	1					3
Vulnus venenatum		1	1					1
VIOLENT DISEASES AND DEATHS.								
Ambustio		6	5			1		56
Concussio cerebri		4	3			1		11
Contusio		14	14					111
Fractura		3	1	1			1	22
Luxatio		1	1					8
Stremma		15	15					124
Vulnus contusum	1	13	14					87
Vulnus incisum		3	3					23
Vulnus laceratum		5	5					88
Vulnus punctum		3	3					35
Total	7	408	357	50		2	6	3,018

AJAX.

[Fourth rate; 550 tons; iron clad; screw; service, 865 days; strength, 59.]

Classification of diseases.	Remaining from last year.	Admitted.	Discharged to duty.	Invalided.		Died.	Remaining at the end of the year.	Total number of sick-days.
				To hospital.	From service.			
Zymotic diseases		9	9					77
Constitutional diseases		4	1	2			1	74
Diseases of the respiratory system		1	1					7
Diseases of the digestive system		3	3					8
Diseases of the genito-urinary system		1	1					14
Violent diseases and deaths		5	4				1	30
Total		23	19	2			2	210

NOTE.—This vessel was in ordinary at City Point, James River, Va., during the year. The average number of days each case was under treatment was 9.11, and the daily average number of sick was .57.

AGE TABLE.

	15 to 25.	25 to 35.	35 to 45.	45 to 55.	Over 55.
Average number on board	21	16	8	8	6
Number sick	10	6	2	2	3

DETAILED STATEMENT.

Diseases.	Remaining from last quarter.	Admitted.	Discharged to duty.	Invalided.		Died.	Continued to next quarter.	Total number of sick-days.
				To hospital.	From service.			
GENERAL DISEASES.								
<i>Zymotic diseases.</i>								
Febris intermittens		4	4					18
Parotitis		5	5					59
<i>Constitutional diseases.</i>								
Adynamia		1		1				1
Rheumatismus chronicus		2	1				1	9
Syphilis primitiva		1		1				64
<i>Diseases of the respiratory system.</i>								
Laryngitis		1	1					7
<i>Diseases of the digestive system.</i>								
Colica		1	1					3
Constipatio		1	1					3
Dyspepsia		1	1					2
<i>Diseases of the genito-urinary system.</i>								
Gonorrhoea		1	1					14
VIOLENT DISEASES AND DEATHS.								
Contusio		2	2					7
Vulnus incisum		1					1	5
Vulnus laceratum		2	2					18
Total		23	19	2			2	210

ALARM.

[Fourth rate; 311 tons; iron torpedo ram; service, 365 days; strength, 33. This vessel was at the navy-yard, Washington, D. C., during the year.]

AGE TABLE.

	15 to 25.	25 to 35.	35 to 45.	45 to 55.	Over 55.
Average number on board	6	13	10	4	.....

ALLIANCE.

[Third rate; 615 tons; wood; screw; service, 365 days; strength, 174.]

Classification of diseases.	Remaining from last year.	Admitted.	Discharged to duty.	Invalided.		Died.	Remaining at the end of the year.	Total number of sick-days.
				To hospital.	From service.			
Zymotic diseases		45	38	7				184
Constitutional diseases	1	20	14	7				363
Diseases of the nervous system		4	2	1			1	40
Diseases of the eye		1	1					5
Diseases of the ear		2	2					4
Diseases of the teeth		1	1					3
Diseases of the respiratory system		24	18	4			2	199
Diseases of the digestive system	1	32	31	2				165
Diseases of the genito-urinary system		16	9	6			1	168
Diseases of the locomotive system		1		1				108
Diseases of the integumentary system		37	33	2			2	307
Diseases of the absorbent system		3	2				1	19
Poisons		5	5					17
Violent diseases and deaths	3	48	48	2			1	388
Total	5	239	204	32			8	1,910

NOTE.—This vessel, during the year, cruised in the West Indies, and was 119 days at sea and 246 days in port. The average number of days each case was under treatment was 7.8, and the daily average number of sick was 5.2.

REPORT OF VACCINATION.

	Successful.	Unsuccessful.
No evidence of previous examination	1	4
Presenting good cicatrices	5	17
Evidence of former attack of small-pox		1

NOTE.—Bovine virus from Chelsea, Mass., on points.

AGE TABLE.

	15 to 25.	25 to 35.	35 to 45.	45 to 55.	Over 55.
Average number on board	74	66	22	10	3
Number sick	82	114	25	20	8

DETAILED STATEMENT.

Diseases.	Remaining from last quarter.	Admitted.	Discharged to duty.	Invalided.		Died.	Continued to next quarter.	Total number of sick-days.
				To hospital.	From service.			
GENERAL DISEASES.								
Zymotic diseases.								
Erysipelas		1	1					12
Febricula		1	1					2
Febris continua simplex		6	6					17
Febris intermittens		95	28	7				140
Febris remittens		2	2					12
Constitutional diseases.								
Adynamia		3	2	1				10
Lumbago		4	4					27
Podagra		1	1					7
Rheumatismus acutus		4	3	1				24
Rheumatismus chronicus		5	1	4				152
Syphilis consecutiva	1	3	3	1				113
LOCAL DISEASES.								
Diseases of the nervous system.								
Nausea marina		1	1					5
Neuralgia		2		1			1	30
Pleurodynia		1	1					5
Diseases of the eye.								
Ulcus corneæ		1	1					5
Diseases of the ear.								
Otitis		2	2					4
Diseases of the teeth.								
Odontalgia		1	1					2
Diseases of the respiratory system.								
Bronchitis acuta		13	10	3				105
Bronchitis chronica		2	2					41
Catarrhus nasalis		4	4					15
Hæmoptysis		2		1			1	10
Laryngitis		1					1	8
Pleuritis		2	2					20
Diseases of the digestive system.								
Cholera morbus		1	1					2
Colica		5	5					19
Congestio hepatis		1	1					4
Diarrhœa acuta		15	15					35
Hæmatemesia		1		1				1
Hæmorrhœis	1		1					2
Icterus		1	1					10
Tonsillitis		8	7	1				32
Diseases of the genito-urinary system.								
Balanitis		2	2					8
Chancroides		3		2			1	32
Cystitis		1		1				2
Gonorrhœa		8	5	3				59
Orchitis		2	2					37
Diseases of the locomotive system.								
Periostitis		1	1					108
Diseases of the integumentary system.								
Abcessus		8	7	1				52
Furunculus		12	12					59
Onychia		1	1					4
Paronychia		1	1					7
Ulcus		15	12	1			2	185

DETAILED STATEMENT—Continued.

Diseases.	Remaining from last quarter.	Admitted.	Discharged to duty.	Invalided.		Died.	Continued to next quarter.	Total number of sick days.
			To hospital.	From service.				
LOCAL DISEASES—Continued.								
Diseases of the absorbent system.								
Adenitis		3	2				1	10
POISONS.								
Alcoholismus acutus		5	5					17
VIOLENT DISEASES AND DEATHS.								
Amblyopia		2	1				1	3
Contusio	1	21	23					106
Fractura		1		1				7
Stremma	2	7	8	1				17
Vulnus contusum		9	9	1				
Vulnus incisum		3	3					
Vulnus laceratum		5	5					61
Total	5	239	204	32			8	1

ALBATROSS.

[Strength, 66; service, 365 days.]

Classification of diseases.	Remaining from last year.	Admitted.	Discharged to duty.	Invalided.		Died.	Remaining at the end of the year.	Total number of sick days.
				To hospital.	From service.			
Zymotic diseases		21	19	2				94
Constitutional diseases		10	9				1	247
Diseases of the nervous system		7	7					34
Diseases of the eye								
Diseases of the ear		1	1					25
Diseases of the respiratory system		9	7	2				85
Diseases of the digestive system		14	13	1				59
Diseases of the genito-urinary system		5	4	1				55
Diseases of the locomotive system								
Diseases of the integumentary system		4	4					22
Poisons		5	5					39
Violent diseases and deaths		8	8					26
Total		84	77	6			1	686

NOTE.—This vessel is on duty connected with the Fish Commission, cruising north of the capes of the Chesapeake, and was in port 257 and at sea 108 days. The average number of days each case was under treatment was 8.16, and the daily average number of sick was 1.87.

REPORT OF VACCINATI

No evidence of previous examination

Presenting good cicatrices

Evidence of former attack of small-pox

NOTE.—The vaccine matter used was

AGE TABLE.

	15 to 25.	25 to 35.	35 to 45.	45 to 55.	Over 55.
Average number on board	24	24	14	4	.....
Number sick	28	31	20	5	.....

DETAILED STATEMENT.

Diseases.	Remaining from last quarter.	Admitted.	Discharged to duty.	Invalided.		Died.	Continued to next quarter.	Total number of sick days.
			To hospital.	From service.				
GENERAL DISEASES.								
Zymotic diseases.								
Erysipelas		1	1					8
Febris continua simplex		2	2					7
Febris intermittens	12	12	12					56
Febris remittens		5	3	2				22
Vaccina		1	1					1
Constitutional diseases.								
Adynamia		2	2					11
Rheumatismus chronicus		2	2					10
Syphilis consecutiva		3	2				1	189
Syphilis primitiva		3	3					37
LOCAL DISEASES.								
Diseases of the nervous system.								
Cephalalgia		1	1					2
Insolatio		1	1					2
Nausea marina		1	1					2
Neuralgia		3	3					16
Vertigo		1	1					12
Diseases of the ear.								
Otalgia		1	1					25
Diseases of the respiratory system.								
Bronchitis acuta		6	6					80
Catarrhus bronchialis		1	1					1
Pleuritis		1		1				1
Pneumonia		1		1				3
Diseases of the digestive system.								
Colica		2	2					3
Diarrhoea acuta		3	3					6
Diarrhoea chronica		1		1				8
Hæmorrhoids		1	1					2
Pharyngitis		1	1					3
Tonsillitis		3	3					11
Vermes		3	3					26
Diseases of the genito-urinary system.								
Gonorrhœa		4	4					54
Nephritis		1		1				1
Diseases of the integumentary system.								
Abscessus		1	1					6
Acne		1	1					9
Eczema		1	1					3
Furunculus		1	1					4
POISONS.								
" marinis		1	1					2
"		1	1					10
"		3	3					27
EASES AND DEATHS.								
.....		7	7					21
.....		1	1					5
.....		84	77	6			1	686

30 REPORT OF THE SURGEON-GENERAL OF THE NAVY.

Passed Assistant Surgeon C. G. Herndon reports the following case as illustrating "the dangerous nature of wounds made by the human teeth":

On the night of June 1, J. F. D., seaman, while in the Bowery, in New York, got into an altercation with a woman, whom he struck in the mouth with right hand. A small cut was made by her teeth over the metacarpo-phalangeal articulation of his ring finger. At 8 a. m. the next day, an interval of only nine hours, the hand and forearm were much swollen, with great pain in wrist, elbow, and shoulder joints. The wound was discharging a thick, dark pus. Constitutional reaction was marked; the tongue was thickly coated, bowels constipated, frontal headache marked, temperature 99.8. Calomel, 0.66 grammes ordered; arm and hand enveloped in list saturated with a 1 per cent. solution of carbolic acid. A pill of calcium sulphide (0.03) ordered at 8 a. m., 1, and 7 p. m. The next morning (June 3), hand was still more swollen and glazed, with marked enlargement of veins of forearm; wrist, elbow, and shoulder joints very painful. The wound had closed and discharge ceased. June 4, rather less swelling of hand and fore-arm; wound opened during the night; less pain; temperature, 99.2. June 5, hand and forearm again much swollen; marked pain; the wound enlarged with a probe, and about 6 c. c. of a greenish pus evacuated. Probe passed under skin and superficial fascia for about 3 inches in direction of wrist. Applied carbolized flaxseed poultice. June 6, hand very much swollen and very painful; fluctuation distinct. An incision, 3 inches in length, from wound toward the wrist evacuated a large quantity of pus and black blood. Continued calcium sulphide and carbolized poultice. The wound suppurated freely for 5 days and then healed rapidly. The temperature became normal on cessation of suppuration. Discharged to duty; well June 19.

BACHE.

[Coast survey steamer; service, 365 days; strength, 39.]

Classification of diseases.	Remaining from last year.	Admitted.	Discharged to duty.	Invalided.		Died.	Remaining at the end of the year.	Total number of sick-days.
				To hospital.	From service.			
Zymotic diseases.....		7	6	1				35
Constitutional diseases.....		2	1	1				5
Diseases of the nervous system.....		1		1				1
Diseases of the respiratory system.....		1	1					5
Diseases of the digestive system.....		1	1					4
Diseases of the genito-urinary system.....		2	2					13
Violent diseases and deaths.....		5	5					23
Total.....		19	16	3				87

NOTE.—This vessel was employed on the coast from New York to Florida; was in port 193 days and 172 days at sea. The average number of days each case was under treatment was 4.83, and the daily average number of sick was .23.

AGE TABLE.

	15 to 25.	25 to 35.	35 to 45.	45 to 55.	Over 55.
Average number on board.....	9	23	7		
Number sick.....		14	5		

DETAILED STATEMENT.

Diseases.	Remaining from last quarter.	Admitted.	Discharged to duty.	Invalided.		Died.	Continued to next quarter.	Total number of sick-days.
				To hospital.	From service.			
GENERAL DISEASES.								
<i>Zymotic diseases.</i>								
Febris intermittens.....		3	3					10
Parotitis.....		4	3	1				25
<i>Constitutional diseases.</i>								
Lumbago.....		1	1					4
Syphilis primitiva.....		1		1				1
LOCAL DISEASES.								
<i>Diseases of the nervous system.</i>								
Pleurodynia.....		1		1				1
<i>Diseases of the respiratory system.</i>								
Catarrhus bronchialis.....		1	1					5
<i>Diseases of the digestive system.</i>								
Dysenteria acuta.....		1	1					5
<i>Diseases of the genito-urinary system.</i>								
Chancroides.....		1	1					6
Orchitis.....		1	1					7
VIOLENT DISEASES AND DEATHS.								
Contusio.....		1	1					6
Struma.....		1	1					3
Vulnus contusum.....		1	1					7
Vulnus laceratum.....		2	2					7
Total.....		19	16	3				87

Passed Assistant Surgeon E. Z. Derr reports that from July 8 to July 27, 1883, at New York, 4 cases of parotitis occurred on the Bache. The first case was contracted by a seaman whilst on leave of absence, and the other 3 followed after his arrival on board. The primary case was transferred to the hospital. The others developed at sea. In all the cases the constitutional disturbance was slight and one or both testicles became involved, the parotid swelling subsiding with the appearance of the testicular trouble. All the cases made good recoveries.

32 REPORT OF THE SURGEON-GENERAL OF THE NAVY

CONSTELLATION.

[Third rate; sails; wood; 1,236 tons; service, 109 days; strength, 305; strength corrected for time, 90.,

Classification of diseases.	Remaining from last year.	Admitted.	Discharged to duty.	Invalided.		Died.	Remaining at the end of the year.	Total number of sick-days.
				To hospital.	From service.			
Zymotic diseases.....		10	10					62
Constitutional diseases.....		11	8	3				62
Diseases of the nervous system.....		4	2	1	1			7
Diseases of the eye.....		1	1					7
Diseases of the teeth.....		1	1					1
Diseases of the respiratory system.....		18	18					78
Diseases of the digestive system.....		7	6	1				32
Diseases of the genito-urinary system.....		4	4					39
Diseases of the locomotive system.....		2	1	1				7
Diseases of the integumentary system.....		4	4					19
Diseases of the absorbent system.....		2	2					17
Violent diseases and deaths.....		11	10	1				59
Total.....		75	67	7	1			390

NOTE.—This vessel cruised along the coast with the cadets of the Naval Academy and was in port 52 and at sea 57 days. The average number of days each case was under treatment was 5.2, and the daily average number of sick was 3.61.

REPORT OF VACCINATION.

	Successful.	Unsuccessful.
No evidence of previous examination.....		3
Presenting good cicatrices.....	6	6
Evidence of former attack of small pox.....		3

NOTE.—Bovine virus used.

AGE TABLE.

	15 to 25.	25 to 35.	35 to 45.	45 to 55.	Over 55.
Average number on board.....	57	22	7	3	1
Number sick.....	57	11	6	0	1

DETAILED STATEMENT.

Diseases.	Remaining from last quarter.	Admitted.	Discharged to duty.	Invalided.		Died.	Continued to next quarter.	Total number of sick-days.
				To hospital.	From service.			
GENERAL DISEASES.								
Zymotic diseases.								
Febris intermittens.....		10	10					62
Constitutional diseases.								
Lumbago.....		2	2					8
Rheumatismus chronicus.....		7	5	2				37
Syphilis consecutiva.....		2	1	1				17

DETAILED STATEMENT—Continued.

Diseases.	Remaining from last quarter.	Admitted.	Discharged to duty.	Invalided.		Died.	Continued to next quarter.	Total number of sick-days.
			To hospital.	From service.				
LOCAL DISEASES.								
<i>Diseases of the nervous system.</i>								
Dementia		1			1			1
Epilepsia		1		1				3
Neuralgia		2	2					3
<i>Diseases of the eye.</i>								
Conjunctivitis		1	1					7
<i>Diseases of the teeth.</i>								
Parulis		1	1					1
<i>Diseases of the respiratory system.</i>								
Asthma		1	1					1
Bronchitis acuta		11	11					58
Catarrhus bronchialis		5	5					18
Laryngitis		1	1					1
<i>Diseases of the digestive system.</i>								
Colica		3	3					6
Dyspepsia		2	2					18
Hernia		1		1				7
Pharyngitis		1	1					1
<i>Diseases of the genito-urinary system.</i>								
Chancroides		3	3					28
Orchitis		1	1					11
<i>Diseases of the locomotive system.</i>								
Periostitis		2	1	1				7
<i>Diseases of the integumentary system.</i>								
Abscessus		2	2					13
Clavus		1	1					4
Furunculus		1	1					2
<i>Diseases of the absorbent system.</i>								
Adenitis		2	2					17
VIOLENT DISEASES AND DEATHS.								
Abrasio		2	2					7
Contusio		1	1					8
Fractura		1		1				1
Stremma		2	2					22
Vulnus contusum		2	2					6
Vulnus incisum		2	2					7
Vulnus laceratum		1	1					8
Total		75	67	7	1			390

34 REPORT OF THE SURGEON-GENERAL OF THE NAVY.

COLORADO.

[First-rate; wood; screw; 3,022 tons; service, 365 days; strength, 300.]

Classification of diseases.	Remaining from last year.	Admitted.	Discharged to duty.	Invalided.		Died.	Remaining at the end of the year.	Total number of sick-days.
				To hospital.	From service.			
Zymotic diseases		23	15	8				22
Constitutional diseases		17	6	11				
Diseases of the nervous system		9	6	3				
Diseases of the eye	1	3	2	32				
Diseases of the circulatory system		3	1					
Diseases of the respiratory system		17	13	3			1	
Diseases of the digestive system		30	24	6			1	
Diseases of the genito-urinary system	1	14	8	1				
Diseases of the integumentary system	1	19	18	32				13
Diseases of the absorbent system		3	1					11
Non-malignant tumors and cysts		3	3					2
Poisons		1	1					122
Violent diseases and deaths	1	30	23	7			1	
Total	5	172	121	53			3	758

NOTE.—This vessel was employed as the receiving ship at the navy-yard, New York. The average number of days each case was under treatment was 4.22, and the daily average number of sick was 2.67.

REPORT OF VACCINATION.

	Successful.	Unsuccessful.
No evidence of previous examination	17	10
Presenting good cicatrices	172	506
Evidence of former attack of small-pox	1	17

NOTE.—Bovine virus used; all vaccinations on the left arm at the intersection of the deltoid.

AGE TABLE.

	15 to 25.	25 to 35.	35 to 45.	45 to 55.	Over 55.
Average number on board	80	100	80	32	8
Number sick	73	66	25	5	8

DETAILED STATEMENT.

Diseases.	Remaining from last quarter.	Admitted.	Discharged to duty.	Invalided.		Died.	Continued to next quarter.	Total number of sick-days.
				To hospital.	From service.			
GENERAL DISEASES.								
<i>Zymotic diseases.</i>								
Erysipelas.....		3		3				3
Febricula.....		3	3					9
Febris continua simplex.....		3	1					9
Febris intermittens.....		10	9	3				47
Parotitis.....		2	1	1				7
Scarlatina.....		1		1				
Vaccina.....								

DETAILED STATEMENT—Continued.

Diseases.	Remaining from last quarter.	Admitted.	Discharged to duty.	Invalided.		Died.	Continued to next quarter.	Total number of sick-days.
				To hospital.	From service.			
GENERAL DISEASES—Continued.								
Constitutional diseases.								
Adynamia		1		1				1
Podagra		1	1					8
Rheumatismus acutus		4	3	1				22
Rheumatismus chronicus		1	1					5
Syphilis consecutiva		5	1	4				20
Syphilis primitiva		5		5				6
LOCAL DISEASES. *								
Diseases of the nervous system.								
Cephalalgia		1	1					2
Convulsio		1	1					6
Epilepsia		2	2					4
Melancholia		1		1				1
Neuralgia		2	1	1				4
Paralysis		1		1				1
Sciatica		1	1					4
Diseases of the eye.								
Amaurosis	1			1				7
Conjunctivitis		1	1					3
Iritis		2	1	1				4
Diseases of the circulatory system.								
Angina pectoris		1	1					14
Palpitatio		2		2				5
Diseases of the respiratory system.								
Bronchitis acuta		2	1	1				7
Catarrhus bronchialis		6	4	1			1	17
Catarrhus nasalis		3	3					21
Hemoptysis		1	1					3
Laryngitis		4	4					27
Pneumonia		1		1				1
Diseases of the digestive system.								
Cholera morbus		1	1					2
Colica		1	1					6
Constipatio		1		1				2
Diarrhoea acuta		3	3					11
Dysenteria acuta		1	1					9
Dyspepsia		2	1	1				4
Gastrodynia		1	1					3
Hepatitis acuta		1		1				6
Hernia		1	1					1
Icterus		1		1				2
Tonsillitis	1	16	14	2			1	65
Vermes		1	1					7
Diseases of the genito-urinary system.								
Balanitis	1	1	1	1				10
Chaneroides		4	1	3				23
Cystitis		1		1				3
Gonorrhoea		5	4	1				10
Orchitis		3	2	1				16
Diseases of the integumentary system.								
Abscessus		7	7					64
Anthrax		2	2					15
Furunculus		4	4					19
Herpes		1	1					7
Oncychia		1		1				1
Ulcus	1	3	3	1				30
Urticaria		1	1					16

DETAILED STATEMENT—Continued.

Diseases.	Remaining from last quarter.	Admitted.	Discharged to duty.	Invalided.		Died.	Continued to next quarter.	Total number of sick-days.
				To hospital.	From service.			
LOCAL DISEASES—Continued.								
<i>Diseases of the absorbent system.</i>								
Adenitis		3	1	2				13
<i>Non-malignant tumors and cysts.</i>								
Condyloma		1	1					2
Cystis		2	2					9
POISONS.								
Alcoholismus acutus.....		1	1					2
VIOLENT DISEASES AND DEATHS.								
Abrasio		2	2					4
Ambustio		1		1				1
Contusio		12	11	1				47
Fractura		1	1					14
Stremma	1	5	3	2			1	13
Vulnus contusum		3	2	1				9
Vulnus incisum		3	3					25
Vulnus laceratum		2	1	1				7
Vulnus sclopetarium		1		1				1
Total	5	172	121	53			3	

DESPATCH.

]Fourth rate; wood screw, 730 tons; strength, 67; service, 365 days.]

Classification of diseases.	Remaining from last year.	Admitted.	Discharged to duty.	Invalided.		Died.	Remaining at the end of the year.	Total number of sick-days.
				To hospital.	From service.			
Zymotic diseases		2	2					6
Constitutional diseases		1		1				1
Diseases of the nervous system		1	1					3
Diseases of the circulatory system		1		1				
Diseases of the respiratory system		1	1					
Diseases of the digestive system		7	7					
Diseases of the genito-urinary system		1		1				
Diseases of the integumentary system		5	5					
Diseases of the absorbent system		1		1				
Violent diseases and deaths		3	3					56
Total		23	19	4				132

NOTE.—This vessel cruised north of the capes of the Chesapeake, and was at sea 19 and in port 346 days. The average number of days each case was under treatment was 7.09, and the daily average number of sick was .51.

AGE TABLE.

	15 to 25.	25 to 35.	35 to 45.	45 to 55.	Over
Average number on board				10	1
Number sick					1

DETAILED STATEMENT.

Diseases.	Remaining from last quarter.	Admitted.	Discharged to duty.	Invalided.		Died.	Continued to next quarter.	Total number of sick-days.
				To hospital.	From service.			
GENERAL DISEASES.								
Zymotic diseases.								
Febris intermittens.....		2	2					6
Constitutional diseases.								
Syphilis primitiva.....		1		1				1
LOCAL DISEASES.								
Diseases of the nervous system.								
Neuralgia.....		1	1					3
Diseases of the circulatory system.								
Hydrops pericardii.....		1		1				5
Diseases of the respiratory system.								
Phthisis pneumonica acuta.....		1	1					26
Diseases of the digestive system.								
Cholera morbus.....		1	1					4
Diarrhoea acuta.....		3	3					18
Dyspepsia.....		1	1					3
Tonsillitis.....		2	2					10
Diseases of the genito-urinary system.								
Chancroides.....		1		1				7
Diseases of the integumentary system.								
Abcessus.....		1	1					31
Anthrax.....		1	1					7
Furunculus.....		1	1					3
Ulcus.....		2	2					8
Diseases of the absorbent system.								
Adenitis.....		1		1				1
VIOLENT DISEASES AND DEATHS.								
Stremma.....		1	1					9
Vulnus contusum.....		1	1					29
Vulnus laceratum.....		1	1					12
Total.....		23	19	4				183

DALE.

[Third rate; wood; sails; 320 tons; strength, 159; corrected for time, 42.6; service, 96 days.]

Classification of diseases.	Remaining from last year.	Admitted.	Discharged to duty.	Invalided.		Died.	Remaining at the end of the year.	Total number of sick-days.
				To hospital.	From service.			
Zymotic diseases		1	1					4
Constitutional diseases		4	4					6
Diseases of the nervous system		17	17					29
Diseases of the teeth		1	1					1
Diseases of the respiratory system		18	18					100
Diseases of the digestive system		18	18					27
Diseases of the genito-urinary system		4	3	1				49
Diseases of the integumentary system		7	7					24
Violent diseases and death		11	10	1				38
Total		81	79	2				

NOTE.—This vessel cruised north of the capes of the Chesapeake, and was in port 49½ and at sea 46½ days. The average number of days each case was under treatment, 4.13, and the daily average number of sick was 3.41.

AGE TABLE.

	15 to 25.	25 to 35.	35 to 45.	45 to 55.	Over
Average number on board	26	9	5	1	1
Number sick	66	7	5	1	1

DETAILED STATEMENT.

Diseases.	Remaining from last quarter.	Admitted.	Discharged to duty.	Invalided.		Died.	Continued to next quarter.	Total number of sick-days.
				To hospital.	From service.			
GENERAL DISEASES.								
Zymotic diseases.								
Febricula.....		1	1					4
Constitutional diseases.								
Adynamia.....		1	1					1
Rheumatismus acutus.....		3	3					7
LOCAL DISEASES.								
Diseases of the nervous system.								
Cephalalgia.....		3	3					3
Nausea marina.....		13	13					23
Neuralgia.....		1	1					3
Diseases of the teeth.								
Odontalgia.....		1	1					1
Diseases of the respiratory system.								
Catarrhus bronchialis.....		18	18					100

DETAILED STATEMENT—Continued.

Diseases.	Remaining from last quarter.	Admitted.	Discharged to duty.	Invalided.		Died.	Continued to next quarter.	Total number of sick-days.
				To hospital.	From service.			
LOCAL DISEASES—Continued.								
<i>Diseases of the digestive system.</i>								
Colica		9	9					18
Diarrhœa acuta		3	3					6
Dyspepsia		4	4					8
Hæmorrhoids		1	1					2
Tonallitia		1	1					2
<i>Diseases of the genito-urinary system.</i>								
Enuresis		1		1				3
Gonorrhœa		2	2					25
Orchitis		1	1					21
<i>Diseases of the integumentary system.</i>								
Furunculus		7	7					24
VIOLENT DISEASES AND DEATHS.								
Abrasio		1	1					1
Ambustio		1	1					11
Contusio		2	2					9
Fractura		1		1				17
Stemma		4	4					9
Vulnus contusum		1	1					22
Vulnus laceratum		1	1					14
Total		81	79	2				235

FRANKLIN.

[First rate; wood; screw; 3,173 tons; service, 365 days; strength, 165.]

Classification of diseases.	Remaining from last year.	Admitted.	Discharged to duty.	Invalided.		Died.	Remaining at the end of the year.	Total number of sick-days.
				To hospital.	From service.			
Zymotic diseases	1	20	16	5				118
Constitutional diseases	13	8	8	5				94
Diseases of the nervous system	5	4	4	1				35
Diseases of the eye		3	3					23
Diseases of the respiratory system	1	10	9	2				49
Diseases of the digestive system		13	13					43
Diseases of the genito-urinary system	1	9	7	2			1	125
Diseases of the integumentary system		9	9					94
Diseases of the absorbent system	1	4	3	2				32
Poisons		1	1					2
Violent diseases and deaths	1	18	13	3		2	1	111
Total	5	105	86	20		2	2	723

NOTE.—This vessel was the receiving-ship at the navy-yard, Norfolk, Va. The deaths were one each, respectively, from drowning and fracture of the cranium. The average number of days each case was under treatment was 6.57, and the daily average number of sick was 1.98.

REPORT OF VACCINATION.

	Successful.	Unsuccessful.
No evidence of previous examination	4	4
Presenting good cicatrices	12	20
Evidence of former attack of small-pox	2	0

40 REPORT OF THE SURGEON-GENERAL OF THE NAVY.

AGE TABLE.

	15 to 25.	25 to 35.	35 to 45.	45 to 55.	Over 55.
Average number on board	49	60	38	13	5
Number sick.....	42	35	13	13	7

DETAILED STATEMENT.

Diseases.	Remaining from last quarter.	Admitted.	Discharged to duty.	Invalided.		Died.	Continued to next quarter.	Total number of sick-days.
				To hospital.	From service.			
GENERAL DISEASES.								
Zymotic diseases.								
Febricula		1	1					1
Febris continua simplex		1	1					12
Febris intermittens	1	14	13	2				55
Febris remittens		1		1				11
Morbilli		1		1				1
Roseola		1	1					11
Vaccina		1		1				22
Constitutional diseases.								
Adynamia		1		1				3
Lumbago		1						5
Rheumatismus acutus		2	2					24
Rheumatismus chronicus		3	2	1				23
Syphilis consecutiva		4	2	2				34
Syphilis primitiva		1		1				1
Torticollis		1	1					4
LOCAL DISEASES.								
Diseases of the nervous system.								
Nausea marina		5	4	1				35
Diseases of the eye.								
Conjunctivitis		2	2					17
Iritis		1	1					11
Diseases of the respiratory system.								
Asthma	1			1				2
Bronchitis acuta		7	7					32
Catarrhus bronchialis		1	1					4
Phthisis pneumonica chronica		1		1				2
Pleuritis		1	1					9
Diseases of the digestive system.								
Constipatio		1	1					2
Diarrhoea acuta		7	7					16
Dysenteria acuta		1	1					6
Hæmatemesia		1	1					8
Hæmorrhoids		2	2					10
Tonsillitis		1	1					1
Diseases of the genito-urinary system.								
Chancroides		3	1	1			1	42
Cystitis	1			1				2
Gonorrhœa		3	3					49
Orchitis		3	3					32
Diseases of the integumentary system.								
Abcessus		5	5					78
Furunculus		3	3					10
Ulcus		1	1					6
Diseases of the absorbent system.								
Adenitis	1	4	3	2				32

DETAILED STATEMENT—Continued.

Diseases.	Remaining from last quarter.	Admitted.	Discharged to duty.	Invalided.		Died.	Continued to next quarter.	Total number of sick-days.
				To hospital.	From service.			
POISONS.								
Alcoholismus acutus.....		1	1					2
VIOLENT DISEASES AND DEATHS.								
Concussio cerebri.....		1				1		7
Contusio.....		1	1					1
Fractura.....		3		2			1	5
Stremma.....	1	7	7	1				45
Submersio.....		1		1		1		1
Vulnus contusum.....		1	1					3
Vulnus incisum.....		1	1					21
Vulnus laceratum.....		2	2					14
Vulnus sclopetarium.....		1	1					14
Total	5	105	86	20		2	2	723

Assistant Surgeon Philip Leach, in the report for the second quarter, 1883, reports the following:

W. T. H., cabin steward, age, 45 $\frac{1}{2}$, native of Maryland; negro; about 9.30 a. m., May 25, 1883, fell from berth deck into the main hold. Was seen immediately after the accident; was found lying face downward with profuse hemorrhage from the nostrils, unconscious and without any mobility; pupils irregularly dilated and insensible to light; respirations feeble, pulse normal, skin cold and moist. Incomplete reaction set in in a few minutes, when he vomited a mixture of food and blood, the blood apparently having been swallowed; the pupils became normal, and he responded rationally to a few questions; the movements of the limbs were free and normal. During the night urinated in the erect posture; complained of severe pain in the head, and became irrational and restless. There was no evidence of fracture. Ordered cold applications to the head and rest.

May 26.—Swelling and ecchymosis about the left eye; slept at intervals, but when awake was restless, and was with difficulty retained in bed. Recognized his wife and family, but was not quite rational. Continued the cold applications to the head; ordered a saline laxative and placed him on milk diet.

May 27.—Slept irregularly; is very restless; limbs in constant motion. Pain in head continues; pulse 88, full and strong; bowels moved and the dejection appeared to contain blood. Did not respond to questions nor recognize his relatives, although awake.

May 28.—In the morning urinated whilst standing on his feet. Recognized his wife; pulse, 72. In the evening very restless with delirium; the evacuation from the bowels was white, milky. Has picking at the bed-clothes; was quieted by .015 gram of sulphate of morphia.

May 29.—Somnolent, restless; limbs in frequent movement, eyes partially open; morning pulse 68, full and strong; evening pulse 76. Does not tolerate the cold applications to his head.

May 30.—During the day was quiet and unconscious, tolerates the cold applications to head, keeps his head in one position. In the night, restless, with muttering delirium. About 10 p. m. the feet became cold and had hot water bottles applied. Pulse in morning 80; evening temperature 99.8°; passes urine freely.

May 31.—Comatose, motionless, deglutition impaired. Gave an enemata of 100^{cc} milk, part of which was retained. Temperature 103°, skin hot; sponged with a mixture of alcohol and water; pulse too rapid to count; frequent and shallow respirations; urine passed involuntarily. Moribund.

June 1.—Died at 1 a. m. Autopsy 7 hours after death. Body fairly nourished; ecchymosed condition of left eye; the marks of contusion on left side of forehead. Upon removal of the scalp there was an effusion of blood on the left side barely amounting to a stain of the parts involved. Found a fracture extending from the middle of the left superciliary ridge, upward, backward, and inward 2 $\frac{1}{4}$ inches; then

from this point running downward, outward, and forward to the temporal ridge, just behind the external angular process; thence downward and inward through the temporal fossa, disappearing in the zygomatic fossa. The triangular plate thus formed is depressed; depression at the apex $2\frac{1}{4}$ inches posteriorly to the superciliary ridge, measuring one-eighth of an inch and diminishing to nothing towards its base. A probe was readily passed through the fracture just behind the superciliary ridge. From a point one-fourth inch below where the fracture crosses the temporal ridge there is an indistinct fissure extending upward and backward to the left parietal eminence, corresponding nearly with the left temporal ridge and about one-half inch below it. Upon removal of the skull-cap the dura-mater was found abnormally adherent to the bone in different places, especially to the depressed portions where there was a thin clot of blood. The arachnoid was normal, except that part corresponding with the depressed bone. This membrane at these points is congested and somewhat roughened. The pia-mater at the same points is congested, a clot exists and also fills the sulci of the cerebrum beneath. There is congestion and softening of the left anterior lobe of the cerebrum corresponding to the depressed bone. No other changes in brain substance were noticed. Upon the removal of the brain a continuation of the fracture was discovered commencing at the point on the exterior of the cranium. From the middle of the superciliary ridge it extends backward and to the right across the roof of the orbit and cribriform plate of the ethmoid just behind the crista galli; thence backward along the right olfactory groove to the right side of the body of the sphenoid; thence by the left side of the foramen ovale to the anterior surface of the petrous portion of the temporal, along which it passes, ending at the junction of the petrous with the squamous portions of the temporal, and at this point there is a clot measuring 1 by $\frac{1}{4}$ by $\frac{1}{8}$ inch. The fracture gapes widely from the orbit to the foramen ovale. A probe passes readily through the fracture of the cribriform plate and emerges from the nostril. There is an indistinct fissure extending from the fracture in the temporal fossa backward and inward on the orbital plate for about 1 inch.

FISH-HAWK.

[Navy-yard, Washington. Strength. 35; service, 365 days.]

Classification of diseases.	Remaining from last year.	Admitted.	Discharged to duty.	Invalided.		Died.	Remained at the end of the year.	Total number of sick-days.
				To hospital.	From service.			
Zymotic diseases		5	5					11
Constitutional diseases		2	1	1				16
Diseases of the nervous system		1	1					3
Diseases of the respiratory system		1	1					5
Diseases of the digestive system		4	4					26
Diseases of the locomotive system		1		1				12
Violent diseases and deaths		1	1					8
Total		15	13	2				81

NOTE.—This vessel has been in service under the Fish Commission. The returns from this vessel are as complete as can be obtained.

AGE TABLE.

	15 to 25.	25 to 35.	35 to 45.	45 to 55.	Over 55.
Average number on board	12	14	9		
Number sick	11	4			

DETAILED STATEMENT.

Diseases.	Remaining from last quarter.	Admitted.	Discharged to duty.	Invalided.		Died.	Continued to next quarter.	Total number of sick-days.
				To hospital.	From service.			
GENERAL DISEASES.								
<i>Zymotic diseases.</i>								
Febris continua simplex		1	1					1
Febris intermittens		12	12					12
Vaccina								5
<i>Constitutional diseases.</i>								
Rheumatismus acuta		1	1					4
Rheumatismus chronicus		1		1				12
LOCAL DISEASES.								
<i>Diseases of the nervous system.</i>								
Cerebritis		1	1					3
<i>Diseases of the respiratory system.</i>								
Pneumonia		1	1					5
<i>Diseases of the digestive system.</i>								
Hepatis acuta		2	2					20
Hernia		1	1					1
Tonsillitis		1	1					5
<i>Diseases of the locomotive system.</i>								
Hydrops articulorum								12
VIOLENT DISEASES AND DEATHS.								
Contusio		1	1					8
Total		15	13	2				81

GEDNEY.

[Coast Survey steamer; strength, 33; service, 365 days.]

Classification of diseases.	Remaining from last year.	Admitted.	Discharged to duty.	Invalided.		Died.	Remaining at the end of the year.	Total number of sick-days.
				To hospital.	From service.			
Zymotic diseases		1	1					3
Constitutional diseases		12	12					19
Diseases of the nervous system		1	1					8
Diseases of the integumentary system		4	4					45
Diseases of the absorbent system		1		1				10
Violent diseases and deaths		3	2	1				16
Total		12	10	2				101

44 REPORT OF THE SURGEON-GENERAL OF THE NAVY.

REPORT OF VACCINATION.

	Successful.	Unsuccessful.
Presenting good cicatrices.....	2	7

AGE TABLE.

	15 to 25.	25 to 35.	35 to 45.	45 to 55.	Over 55.
Average number on board.....	11	17	4	1	0
Number sick.....	4	8	0	0	0

This vessel was employed in the Coast Survey on the coast of the United States. The average number of days each case was under treatment was 8.41 and the daily average number of sick was .27.

DETAILED STATEMENT.

Diseases.	Remaining from last quarter.	Admitted.	Discharged to duty.	Invalided		Died.	Continued to next quarter.	Total number of sick-days.
				To hospital.	From service.			
GENERAL DISEASES.								
<i>Zymotic diseases.</i>								
Catarrhus.....		1	1					3
<i>Constitutional diseases.</i>								
Syphilis consecutiva.....		1	1					12
Syphilis primitiva.....		1	1					7
LOCAL DISEASES.								
<i>Diseases of the nervous system.</i>								
Pleurodynia.....		1	1					8
<i>Diseases of the integumentary system.</i>								
Abscessus.....		1	1					15
Clavus.....		1	1					13
Furunculus.....		2	2					17
<i>Diseases of the absorbent system.</i>								
Adenitis.....		1		1				10
VIOLENT DISEASES AND DEATHS.								
Stremma.....		1	1					7
Vulnus incisum.....		1		1				1
Vulnus sclopetarium.....		1	1					8
Total.....		12	10	2				101

JAMESTOWN.

[Third rate; 695 tons; wood; sails; service, 365 days; strength, 245.]

Classification of diseases.	Remaining from last year.	Admitted.	Discharged to duty.	Invalided.		Died.	Remaining at the end of the year.	Total number of sick-days.
				To hospital.	From service.			
Zymotic diseases	1	34	34	1				274
Constitutional diseases	1	26	27					351
Diseases of the nervous system		21	19	2				74
Diseases of the eye		1	1					18
Diseases of the ear		3	2	1				83
Diseases of the respiratory system	8	67	61	13		1		891
Diseases of the digestive system	1	88	85	3			1	651
Diseases of the genito-urinary system		41	36	2	3			919
Diseases of the locomotive system		1		1				
Diseases of the integumentary system	2	28	20					391
Diseases of the absorbent system		4	4					70
Poisons	1		1					3
Violent diseases and death	7	33	34	6				496
Total	21	347	334	29	3	1	1	4,221

NOTE.—This vessel was 220 days in port and 145 days at sea. The average number of days each case was under treatment was 11.4, and the daily average number of sick was 11.5. The death was from pneumonia.

AGE TABLE.

	15 to 25.	25 to 35.	35 to 45.	45 to 55.	Over 55.
Average number on board	173	39	18	12	3
Number sick	291	46	16	9	6

DETAILED STATEMENT.

Diseases.	Remaining from last quarter.	Admitted.	Discharged to duty.	Invalided.		Died.	Continued to next quarter.	Total number of sick-days.
				To hospital.	From service.			
GENERAL DISEASES.								
<i>Zymotic diseases.</i>								
Febris continua simplex		2	2					7
Febris intermittens		27	27					211
Febris remittens	1	5	5	1				56
<i>Constitutional diseases.</i>								
Adynamia		3	3					38
Rheumatismus acutus	1	14	15					169
Rheumatismus chronicus		7	7					96
Syphilis consecutiva		1	1					15
Syphilis primitiva		1	1					33
LOCAL DISEASES.								
<i>Diseases of the nervous system.</i>								
Cephalalgia		3	3					6
Epilepsia		1		1				1
Nausea marina		8	8					27
Neuralgia		6	5	1				21
Paralysis		1	1					12
Pleurodynia		1	1					5
Vertigo		1	1					2

DETAILED STATEMENT—Continued.

Diseases.	Remaining from last quarter.	Admitted.	Discharged to duty.	Invalided.		Died.	Continued to next quarter.	Total number of sick-days.
				To hospital.	From service.			
LOCAL DISEASES—Continued.								
<i>Diseases of the eye.</i>								
Conjunctivitis		1	1					18
<i>Diseases of the ear.</i>								
Otitis		1	1					12
Otorrhœa		2	1	1				71
<i>Diseases of the respiratory system.</i>								
Bronchitis acuta	7	40	44	3				443
Bronchitis chronica	1	20	15	6				302
Phthisis pneumonica chronica		2	2	2				17
Pleuritis		2	1	1				28
Pneumonia		3	1	1		1		101
<i>Diseases of the digestive system.</i>								
Colica		1	1					7
Diarrhœa acuta		21	21					114
Dysenteria acuta		3	3					8
Dyspepsia		4	4					92
Fistula ani		1	1					42
Hepatitis chronica		1		1				47
Hernia		1	1	1				66
Icterus		1	1					6
Pharyngitis		5	5					6
Tonsillitis	1	49	48	1			1	20
Verues		1	1					242
<i>Diseases of the genito-urinary system.</i>								
Chancroides		3	3					78
Cystitis		1	1					7
Dysuria		1	1					6
Enuresis		7	4		3			106
Gonorrhœa		25	24	1				536
Nephritis		1		1				54
Orchitis		1	1	1				11
Varicocele		2	2					31
<i>Diseases of the locomotive system.</i>								
Synovitis		1		1				6
<i>Diseases of the integumentary system.</i>								
Abcessus	1	12	13					116
Eczema		1	1					4
Furunculus		4	4					47
Herpes		2	2					12
Lichen		1	1					8
Paronychia	1	5	6					141
Ulcus		1	1					49
Unguis involutus		1	1					11
Urticaria		1	1					3
<i>Diseases of the absorbent system.</i>								
Adenitis		4	4					70
POISONS.								
Alcoholismus acutus	1		1					3
VIOLENT DISEASES AND DEATHS.								
Ambustio	1	1	2					43
Contusio	1	16	15	2				101
Fractura		4	1	3				127
Stremma	4	4	7	1				104
Vulnus contusum	1	5	6					68
Vulnus incisum		2	2					12
Vulnus punctum		1	1					41
Total	21	347	334	29	3	1	1	4,221

KEARSARGE.

[Third rate; wood; screw; 695 tons; service, 365 days; strength, 195.]

Classification of diseases.	Remaining from last year.	Admitted.	Discharged to duty.	Invalided.		Died.	Remaining at the end of the year.	Total number of sick-days.
				To hospital.	From service.			
Zymotic diseases		25	20	4			1	72
Constitutional diseases		27	22	5				358
Diseases of the nervous system	1	22	22	1				66
Diseases of the eye		4	4					46
Diseases of the ear		1	1					5
Diseases of the respiratory system		10	8	2				165
Diseases of the digestive system		30	29		1			147
Diseases of the genito-urinary system	2	17	18	1				158
Diseases of the integumentary system	1	26	25	2				179
Diseases of the absorbent system		4	3				1	83
Poisons		3	3					3
Violent diseases and deaths		48	45	3				290
Total	4	217	200	18	1		2	1,572

NOTE.—This vessel was 287½ days in port, and 77½ days at sea. The average number of days each case was under treatment was 7.1 days, and the daily average number of sick was 4.3.

AGE TABLE.

	15 to 25.	25 to 35.	35 to 45.	45 to 55.	Over 55.
Average number on board	97	60	28	9	1
Number sick	124	54	27	14	2

DETAILED STATEMENT.

Diseases.	Remaining from last quarter.	Admitted.	Discharged to duty.	Invalided.		Died.	Continued to next quarter.	Total number of sick-days.
				To hospital.	From service.			
GENERAL DISEASES.								
<i>Zymotic diseases.</i>								
Febricula.....		5	4	1				17
Febris intermittens.....		15	12	2			1	35
Vaccina.....		4	4					19
Varioloides.....		1		1				1
<i>Constitutional diseases.</i>								
Adynamia.....		4	2	2				20
Lumbago.....		5	5					19
Myalgia.....		1	1					6
Rheumatismus acutus.....		5	4	1				93
Rheumatismus chronicus.....		7	5	2				140
Syphilis consecutiva.....		1	1					32
Syphilis primitiva.....		3	3					46
Torticollis.....		1	1					2
LOCAL DISEASES.								
<i>Diseases of the nervous system.</i>								
Nalalgia.....		7	7					14
Nalsto.....		1	1					1
Nal.....		1		1				2
Nal.....		2	2					6

DETAILED STATEMENT—Continued.

Diseases.	Remaining from last quarter.	Admitted.	Discharged to duty.	Invalided.		Died.	Continued to next quarter.	Total number of sick-days.
				To hospital.	From service.			
LOCAL DISEASES—Continued.								
Diseases of the nervous system—Continued.								
Nausea marina		8	8					21
Neuralgia	1	3	4					22
Diseases of the eye.								
Conjunctivitis		2	2					18
Hordeolum		1	1					1
Iritis		1	1					27
Diseases of the ear.								
Otitis		1	1					5
Diseases of the respiratory system.								
Bronchitis acuta		3	2	1				53
Bronchitis chronica		2	2					12
Catarrhus bronchialis		3	2	1				26
Hæmoptysis		2	2					74
Diseases of the digestive system.								
Cholera morbus		3	3					9
Colica		9	9					17
Constipatio		3	3					5
Diarrhœa acuta		5	5					16
Gastritis		1	1					26
Hæmorrhœia		2	2					10
Hernia		2	1		1			22
Tonsillitis		5	5					42
Diseases of the genito-urinary system.								
Chaneroides		4	4					13
Congestion kidneys		1	1					7
Gonorrhœa		8	8					60
Orethritis	2	3	5					77
Urethra strictura		1		1				1
Diseases of the integumentary system.								
Abcessus		5	5					23
Clavus		1	1					8
Furunculus		12	12					52
Paronychia		1	1					3
Ulcus	1	7	6	2				93
Diseases of the absorbent system.								
Adenitis		4	3				1	83
POISONS.								
Alcoholismus acutus		3	3					3
VIOLENT DISEASES AND DEATHS.								
Abrasio		3	3					9
Concussio cerebri		1		1				1
Contusio		15	15					58
Fractura		3	1	2				29
Luxatio		3	3					13
Stemma		9	9					52
Vulnus contusum		2	2					21
Vulnus incisum		5	5					31
Vulnus laceratum		5	5					67
Vulnus punctum		1	1					3
Vulnus sclopetarium		1	1					6
Total	4	217	200	18	1		2	1,573

MINNESOTA.

[First rate; wood; screw; 3,000 tons; service, 365 days; strength, 313.]

Classification of diseases.	Remaining from last year.	Admitted.	Discharged to duty.	Invalided.		Died.	Remaining at the end of the year.	Total number of sick days.
				To hospital.	From service.			
Zymotic diseases		30	24	6				131
Constitutional diseases		26	22	4				189
Diseases of the nervous system		9	7	1			1	29
Diseases of the eye		4	4					60
Diseases of the ear		6	6					36
Diseases of the circulatory system		3		3				7
Diseases of the respiratory system		32	30	1			1	207
Diseases of the digestive system	2	42	41	2	1			174
Diseases of the genito-urinary system	1	23	14	5	4		1	239
Diseases of the integumentary system	1	47	44	2			1	247
Diseases of the absorbent system		5	3	2				21
Poisons		1	1					2
Violent diseases and deaths		64	58	4		1	1	353
Total	3	292	254	30	5	1	5	1,695

NOTE.—This vessel was used as the training ship, and was in New York Harbor the entire year. The average number of days each case was under treatment was 5.6, and the daily average number of sick was 4.5. The death was from drowning.

REPORT OF VACCINATION.

	Successful.	Unsuccessful.
No evidence of previous examination	160	222
Presenting good cicatrices	88	29
Evidence of former attack of small-pox	2	1

NOTE.—Bovine virus used.

AGE TABLE.

	15 to 25.	25 to 35.	35 to 45.	45 to 55.	Over 55.
Average number on board	205	55	33	17	8
Number sick	214	41	24	13	8

DETAILED STATEMENT

Diseases.	Remaining from last quarter.	Admitted.	Discharged to duty.	Invalided.		Died.	Continued to next quarter.	Total number of sick days.
				To hospital.	From service.			
GENERAL DISEASES.								
<i>Zymotic diseases.</i>								
Febricula.....		10	10					37
Febris continua simplex.....		6	5	1				31
Febris enterica.....		3		3				9
Febris intermittens.....		4	4					16
Parotitis.....		1	1					18
Scarlatina.....		2		2				2
Vaccina.....		4	4					18

DETAILED STATEMENT—Continued.

Diseases.	Remaining from last quarter.	Admitted.	Discharged to duty.	Invalided.		Died.	Continued to next quarter.	Total number of sick-days.
				To hospital.	From service.			
GENERAL DISEASES—Continued.								
Constitutional diseases.								
Lumbago.....		3	3					
Rheumatismus acutus.....		18	14	4				
Rheumatismus chronicus.....		1	1					
Syphilis consecutiva.....		1	1					
Syphilis primitiva.....		3	3					
LOCAL DISEASES.								
Diseases of the nervous system.								
Cephalalgia.....		3	2	1				
Neuralgia.....		6	5				1	
Diseases of the eye.								
Cataracta.....		1	1					
Hordeolum.....		1	1					
Ulcus corneæ.....		2	2					
Diseases of the ear.								
Otalgia.....		1	1					
Otitis.....		3	3					
Otorrhœa.....		2	2					
Diseases of the circulatory system.								
Morbi valvularum cordis.....		3		3				
Diseases of the respiratory system.								
Bronchitis acuta.....		9	9					
Bronchitis chronica.....		2	1					1
Catarrhus bronchialis.....		18	18					
Pleuritis.....		1		1				
Pneumonia.....		2	2					
Diseases of the digestive system.								
Colica.....		1	1					
Constipatio.....		3	3					
Diarrhœa acuta.....		7	7					
Dyspepsia.....		3	2	1				
Gastrodynia.....		1	1					
Hæmorrhoids.....		1			1			
Pharyngitis.....	2	17	19					
Tonsillitis.....		9	8	1				
Diseases of the genito-urinary system.								
Balanitis.....		1	1					
Chancroides.....		3	2	1				
Enuresis.....		1			1			
Gonorrhœa.....		14	18	2	3		1	
Orchitis.....		3	3					
Phymosis.....	1			1				
Varicocele.....		1		1				
Diseases of the integumentary system.								
Abcessus.....		8	8					
Eczema.....		2	2					
Furunculus.....		27	26				1	
Paronychia.....		2	2					
Ulcus.....		6	4	2				
Unguis involutus.....		2	2					
Diseases of the absorbent system.								
Adenitis.....		1	3	2				

DETAILED STATEMENT—Continued.

Diseases.	Remaining from last quarter.	Admitted.	Discharged to duty.	Invalided.		Died.	Continued to next quarter.	Total number of sick-days.
				To hospital.	From service.			
POISONS.								
Alcoholismus acutus		1	1					2
VIOLENT DISEASES AND DEATHS.								
Abrasio		2	2					5
Ambustio		3	3					44
Concusio cerebri		1	1					15
Contusio		21	21					94
Fractura		5	3	2				26
Luxatio		1	1	1				1
Stemma		13	12				1	60
Submersio		1				1		1
Vulnus contusum		7	7					40
Vulnus incisum		4	4					14
Vulnus laceratum		5	4	1				43
Vulnus punctum		1	1					10
Total	3	292	254	30	5	1	5	1,605

MIANTONOMOH.

[Third rate; screw; iron; 1,276 tons; strength, 88; service, 71 days; strength corrected for time, 17.]

Classification of diseases.	Remaining from last year.	Admitted.	Discharged to duty.	Invalided.		Died.	Remaining at the end of the year.	Total number of sick-days.
				To hospital.	From service.			
Zymotic diseases		2	1	1				2
Constitutional diseases		2	1	1				8
Diseases of the nervous system		1		1				10
Diseases of the respiratory system		3		3				9
Diseases of the digestive system		1	1					2
Diseases of the genito-urinary system		1	1					8
Violent diseases and deaths		3	3					26
Total		13	7	6				65

NOTE.—This vessel was in commission 71 days.

AGE TABLE.

	15 to 25.	25 to 35.	35 to 45.	45 to 55.	Over 55.
Average number on board	3	9	3	1	1
Number sick	4	3	2	3	1

DETAILED STATEMENT.

Diseases.	Remaining from last quarter.	Admitted.	Discharged to duty.	Invalided.		Died.	Continued to next quarter.	Total number of sick days.
				To hospital.	From service.			
GENERAL DISEASES.								
Zymotic diseases.								
Erysipelas.....		1		1				1
Febris intermittens.....		1		1				1
Constitutional diseases.								
Adynamia.....		1		1				1
Lumbago.....		1	1					1
LOCAL DISEASES.								
Diseases of the nervous system.								
Neuralgia.....		1		1				10
Diseases of the respiratory system.								
Bronchitis acuta.....		2		2				3
Bronchitis chronica.....		1		1				4
Diseases of the digestive system.								
Diarrhoea acuta.....		1	1					2
Diseases of the genito-urinary system.								
Orchitis.....		1	1					3
VIOLENT DISEASES AND DEATHS.								
Contusio.....		1	1					17
Vulnus incisum.....		1	1					4
Vulnus laceratum.....		1	1					5
Total.....		13	7	6				

MICHIGAN.

[Fourth rate; iron; side-wheel; 450 tons; strength, 87; service, 365 days.]

Classification of diseases.	Remaining from last year.	Admitted.	Discharged to duty.	Invalided.		Remaining at the end of the year.	Total number of sick days.
				To hospital.	Died.		
Zymotic diseases.....		5	5				14
Constitutional diseases.....		3	3				12
Diseases of the nervous system.....		7	6	1			13
Diseases of the respiratory system.....		9	7	2			18
Diseases of the digestive system.....		18	17	1			103
Diseases of the genito-urinary system.....		1	1				
Diseases of the integumentary system.....		5	5				
Non-malignant tumors and cysts.....		1	1				
Violent diseases and deaths.....		7	7				
Total.....		56	52	4			

NOTE.—This vessel was at sea on the lakes 3½ days, and in port 36½ days. The average number of days each case was under treatment was 11.16, and the daily average number of sick was 1.7

AGE TABLE.

	15 to 25.	25 to 35.	35 to 45.	45 to 55.	Over 55.
Average number on board	22	21	33	9	2
Number sick	15	10	24	5	2

DETAILED STATEMENT.

Diseases.	Remaining from last quarter.	Admitted.	Discharged to duty.	Invalide		Died.	Continued to 1 st quarter.	Total number of sick-days.
				To hospital.	From service.			
GENERAL DISEASES.								
<i>Zymotic diseases.</i>								
Febricula.....		12	12					9
Febris continua simplex.....		1	1					4
Febris intermittens.....		12	12					3
<i>Constitutional diseases.</i>								
Lumbago.....		12	12					11
Rheumatismus acutus.....		1	1					7
LOCAL DISEASES.								
<i>Diseases of the nervous system.</i>								
Insolatio.....		2	2					49
Melancholia.....		1		1				7
Neuralgia.....		4	4					13
<i>Diseases of the respiratory system.</i>								
Bronchitis acuta.....		3	3					13
Bronchitis chronica.....		1		1				64
Catarrhus bronchialis.....		1	1					5
Laryngitis.....		3	3					17
Pleuritis.....		1		1				
<i>Diseases of the digestive system.</i>								
Cholera morbus.....		1	1					7
Colica.....		1	1					4
Diarrhoea acuta.....		2	2					11
Dyspepsia.....		1	1					6
Haemorrhoids.....		1	1					53
Hernia.....		1		1				46
Pharyngitis.....		7	7					39
Tonsillitis.....		4	4					46
<i>Diseases of the genito-urinary system.</i>								
Albuminuria.....		1	1					95
<i>Diseases of the integumentary system.</i>								
Abscessus.....		4	4					36
Furunculus.....		1						3
<i>Non-malignant tumors and cysts.</i>								
Polypus.....		1	1					15
VIOLENT DISEASES AND DEATHS.								
Contusio.....		2	2					61
Strenua.....		2						15
Vulnus incisum.....		1	1					4
Vulnus laceratum.....		1	1					4
Vulnus punctum.....		1	1					6
Total.....		56	52	4				654

NEW HAMPSHIRE.

[First rate; wood; sails; 2,800 tons; service, 365 days; strength, 815.]

Classification of diseases.	Remaining from last year.	Admitted.	Discharged to duty.	Invalided.		Died.	Remaining at the end of the year.	Total number of sick-days.
				To hospital.	From service.			
Zymotic diseases		66	65	1				
Constitutional diseases		25	23	1	1			
Diseases of the nervous system		17	14			1		
Diseases of the eye		5	4				1	
Diseases of the ear		1	1					
Diseases of the teeth		1	1					
Diseases of the respiratory system		40	38					
Diseases of the digestive system		128	123	3				
Diseases of the genito-urinary system		21	19	2				
Diseases of the locomotive system	1	8	8	1				
Diseases of the integumentary system	5	57	60					
Diseases of the absorbent system	2	1	1	1				
Poisons		7	7					
Violent diseases and deaths	3	91	90		1	1	2	
Total	9	469	454	9	4	2	9	

NOTE.—This vessel was 365 days in port, in use as training-ship. The average number of days each case was under treatment was 7.1, and the daily average number of sick 9.3. The deaths were from meningitis and suicide.

REPORT OF VACCINATION.

	Successful.	Unsuccessful.
No evidence of previous examination	9	0
Presenting good cicatrices	11	2
Evidence of former attack of small-pox	0	1

NOTE.—Bovine virus.

AGE TABLE.

	15 to 25.	25 to 35.	35 to 45.	45 to 55.	Over 55.
Average number on board	218	49	33	12	1
Number sick	405	34	19	17	1

DETAILED STATEMENT.

Diseases.	Remaining from last quarter.	Admitted.	Discharged to duty.	Invalided.		Continued to next quarter.	Total number of sick-days.
				To hospital.	From service.		
GENERAL DISEASES.							
Zymotic diseases.							
Erysipelas		5	4	1			
Febricula		11	11				
Febris continua simplex		5	5				
Febris intermittens		27	27				
Febris remittens		4	4				
Vaccina		14	14				

DETAILED STATEMENT—Continued.

Diseases.	Remaining from last quarter.	Admitted.	Discharged to duty.	Invalided.		Died.	Continued to next quarter.	Total number of sick-days.
				To hospital.	From service.			
GENERAL DISEASES—Continued.								
<i>Constitutional diseases.</i>								
Adynamia		3	3					7
Lumbago		3	3					9
Podagra		1	1					2
Rheumatismus acutus		13	12		1			126
Rheumatismus chronicus		2	2					5
Senectus		1		1				4
Syphilis consecutiva		1	1					41
Syphilis primitiva		1	1					10
LOCAL DISEASES.								
<i>Diseases of the nervous system.</i>								
Cephalalgia		3	3					11
Epilepsia		3	1		2			40
Meningitis		1				1		2
Neuralgia		4	4					22
Pleurodynia		1	1					13
Sciatica		2	2					14
Vertigo		3	3					7
<i>Diseases of the eye.</i>								
Conjunctivitis		4	3				1	13
Ulcus corneæ		1	1					5
<i>Diseases of the ear.</i>								
Otitis		1	1					10
<i>Diseases of the teeth.</i>								
Odontalgia		1	1					9
<i>Diseases of the respiratory system.</i>								
Asthma		1	1					6
Bronchitis acuta		18	6				2	119
Bronchitis chronica		2	2					17
Catarrhus bronchialis		10	10					24
Laryngitis		4	4					25
Pleuritis		4	4					122
Pneumo-thorax		1	1					44
<i>Diseases of the digestive system.</i>								
Cholera morbus		1	1					3
Colica		8	8					51
Diarrhoea acuta		24	24					80
Dysenteria acuta		7	5	2				74
Dyspepsia		1	1					1
Fistula ani		1		1				3
Hernia		1	1					2
Pharyngitis		37	37					147
Rhagades ani		1	1					7
Tonsillitis		43	41				2	205
Vermes		4	4					7
<i>Diseases of the genito-urinary system.</i>								
Chancroides		1	1					2
Enuresis		4	4					9
Gonorrhoea		8	7	1				70
Ischuria		2	2					3
Orchitis		3	3					44
Urethrae strictura		1	1					11
Varicocele		2	2					5

DETAILED STATEMENT—Continued.

Diseases.	Remaining from last quarter.	Admitted.	Discharged to duty.	Invalided.	
				To hospital.	From service.
LOCAL DISEASES—Continued.					
<i>Diseases of the locomotive system.</i>					
Synovitis	1	8	8	1	
<i>Diseases of the integumentary system.</i>					
Abscessus	3	9	11		
Furunculus		21	21		
Onychia	1	3	4		
Paronychia		7	7		
Pernio		1	1		
Ulcus		12	11		
Unguis involutus	1	1	2		
Urticaria		2	2		
Verruca		1	1		
<i>Diseases of the absorbent system.</i>					
Adenitis		2	1		
POISONS.					
Alcoholismus acutus		7	7		
VIOLENT DISEASES AND DEATHS.					
Abrasio		4	3		
Ambustio		7	7		
Concussio cerebri		1	1		
Contusio		12	12		
Fractura		2	2		
Strenua	1	16	17		
Suicidium		1			
Vulnus confusum		14	13		
Vulnus incisum	1	18	1		
Vulnus laceratum	1	3			
Vulnus punctum		13	1		
Total	9	469	4		

Surgeon John C. Wise, U. S. N., reports interest:

F. W. M., landsman, aged 21; native of Rhode Island, complaining of sore throat and general malaise, temperature 104.6°, tonsils swollen and congested. On the 16: Feels exudation over the pharynx. In the afternoon when offered, the patient took no notice of any questions and head supported in his hands. He was placed in a room with occasional fretfulness; the eyes were partially clenched, and so firmly that nothing could be inserted. Temperature rose to 105.6°, with a rapid, compressible pulse which reduced the temperature to 102.6°. He in good condition, passed his urine normally, refuses alcohol as follows: Recumbent on left side with legs straight, eyes partially open, pupils normal; an attempt to raise the right arm caused great pain; this was not the case on the right side. The bowels well confined, the temperature 102.6°. Respirations 24, easy; efforts to raise the arm were not made. During the day the mental condition was one of indifference. Urine was voided in bed. At 11 p. m. the temperature 102.0°. Continuous cold applications were made to the throat with diluted vinegar. His condition at 11 p. m. was the same. On the morning of the 18th.

Necropsy.—Eight hours after death: The usual cadaveric rigidity with hypostatic congestion were noted. There was no osseous change noted in the skull-cap. The dura mater was congested slightly. The arachnoid was extensively congested, and the sub-arachnoid spaces filled with foul-smelling pus, which came away in large quantities when the membranes of the brain were removed. The left hemisphere was covered with a semi-solid purulent exudate, more abundant over the anterior lobe, and diminishing in thickness posteriorly. The brain tissue was softened, but there was no abscess found. The pia mater covering the right hemisphere was deeply congested, the vessels enlarged and tortuous, and no evidence of any pus formation, not even in the track of the large veins; punctate hæmorrhage existed in the cortex of both sides of the brain. The condition of congestion with small purulent deposits was found extending to the cerebellum and medulla. A small quantity of purulent serum occupied the ventricles.

A case of *concussio cerebri*, followed after recovery by epilepsy, was also reported, as well as a case of *fistula ani*, treated successfully without operation.

The following case is reported for the third quarter:

R. M., second cabin boy; age, 16; negro; fell from the futtock shrouds of the foremast to the topgallant forecastle, a distance of 41 feet, sustaining the following injuries: Compound fracture of both bones of right forearm, the radius at middle third, the ulna in lower third, both bones protruding; fracture transverse; posterior angular deformity, with overlapping of the fragments.

Transverse fracture of left radius in the middle third, with slight deformity.

Lateral dislocation of the right ankle outward, with fracture and separation of the external malleolus.

Contusion of the right frontal region.

Despite the gravity of the accident the general conditions were favorable. There was loss of consciousness for a few moments and the resultant shock was slight. Whilst preparing to dress the injuries, about half an hour after the accident, tetanic convulsions suddenly occurred; marked *emprostotonos*; the angles of the mouth were drawn up; the risus sardonius marked; the eyes were injected and face livid; the respiration was shallow and difficult; pulse feeble, irregular; the jaws were firmly closed and there was great muscular rigidity. $\frac{ss}{i}$ of a gram of Majendie's solution of morphia was administered hypodermically and the inhalation of chloroform resorted to. In about ten minutes after the intermittent use of the anæsthetic the rigidity gave way, followed by great exhaustion, so severe as to require the hypodermic injection of whisky, as the pulse had disappeared at the wrist. The patient soon rallied. As he was in great pain, opiates were administered freely and the patient was allowed to rest, further interference being deemed inadmissible, as the fractures had been provisionally secured and the dislocations reduced. Later, as he was doing well, having passed his urine naturally and the pain being much less in severity, the wounds were covered with dry lint, the right forearm placed on a broad, padded splint, extending from above the elbow to the finger tips, and placed upon a pillow and dressed with a solution of acetate of lead and opium. The swelling was very great. The fracture on the left was treated by the usual splints, with the interosseous compress. Cold applications were made to the ankle joint. The pulse was 90°.

July 25.—The patient rested well; pulse, 86; temperature, 100. Dressed the wound with gauze and collodion, over which was placed an antiseptic cloth wet with a 5 per cent. solution of carbolic acid. The patient is doing well.

On the 26th the tumefaction had so much subsided that an apparatus to correct deformity by extension was used; the arm was secured to a splint by tapes so arranged as to permit examination as well as to avoid any pressure on the wound. The limb was extended by the weight and pulley as in fracture of the lower extremity. The patient improved, and on August 7, the extension was suspended, as all deformity was overcome. Dressed the wound with iodoform. On the 16th the Soto-Mayer apparatus for compound fracture was applied. August 20, walked with a slight limp; removed the splints from the simple fracture; motion nearly perfect. On the 27th removed the Soto-Mayer apparatus; there is stiff elbow and impaired motion at shoulder joint. September 7, removed all splints; movement slowly improving; the elbow can only be flexed to an angle of 100°, and extended not beyond 130°. 28th, the motion of left forearm fully returned; that of the left is improving, but rotation is attended with pain; there is slight lateral deformity. The fracture of the malleolus has united, but there is still some swelling, and there is a limp in his gait. The patient is doing well.

The following interesting case is also reported:

H. G. C.; age, 46; schoolmaster; native of Scotland; admitted July 11, 1883, for alcoholism. On the 13th, in a fit of despondency, he took 50 c.c. of a solution of ox-

alic acid (strength, $\frac{1}{2}$ to 32 c.c.), used for removing ink-stains. About four minutes after he had swallowed the solution he was carried to the sick bay, and the vomiting, which had just commenced, was encouraged by tepid water and zinc sulphate $\frac{1}{10}$ gram, with lime-water in abundance. The tongue showed the action of the acid very distinctly. To the last moment he denied any pain either in fauces or stomach. The vomiting soon began to be bloody, and violent purging set in. Whilst an attempt was made to administer 10 c.c. of aromatic spirits of ammonia the heart's action suddenly ceased, and, despite the hypodermic injection of whisky, he died at 6.15 p. m., about fifty minutes after he had swallowed the solution.

Necropsy.—Sixteen hours after death. The usual cadaveric rigidity and hypostatic congestion marked. The stomach and bowels were removed and examined. Stomach natural in size, much deeper in color than normal, contains about $\frac{1}{2}$ of a fluid black and grumous in consistency; the entire mucus surface was intensely congested, and there were numerous points of extravasation, gelatiniform softening and some well-marked parts of corrosion. The small intestine was similarly changed but faded gradually. No other appearance of poisoning was presented in the rest of the viscera.

POWHATAN.

[Second-rate; wood; side-wheel, 2,182 tons; service, 365 days; strength, 296.]

Classification of diseases.	Remaining from last year.	Admitted.	Discharged to duty.	Invalided.		Died.	Remaining at the end of the year.	Total number of sick days.
				To hospital.	From service.			
Zymotic diseases		9	8			1		64
Constitutional diseases		10	7	3				124
Diseases of the nervous system		5	5					16
Diseases of the eye		1	1					3
Diseases of the circulatory system		1		1				1
Diseases of the respiratory system		22	17	5				160
Diseases of the digestive system		25	23	2		1		109
Diseases of the genito-urinary system		6	5				1	31
Diseases of the locomotive system		1		1				5
Diseases of the integumentary system		7	7					67
Diseases of the absorbent system		2	2					30
Violent diseases and death		29	28			1		206
Total		118	102	12		3	1	816

NOTE.—This vessel was 291 days in port and 74 days at sea. The average number of days each case was under treatment was 6.9, and the daily average number of sick was 2.2. The deaths were from remittent fever, peritonitis, and fracture of cranium.

REPORT OF VACCINATION.

	Successful.	Unsuccessful.
Presenting good cicatrices	6	27
Evidence of former attack of small-pox		1

AGE TABLE.

	15 to 25.	25 to 35.	35 to 45.	45 to 55.	Over 55.
Average number on board	145	97	44	6	4
Number sick	62	30	19	5	2

DETAILED STATEMENT.

Diseases.	Remaining from last quarter.	Admitted.	Discharged to duty.	Invalided.		Died.	Continued to next quarter.	Total number of sick days.
				To hospital.	From service.			
GENERAL DISEASES.								
Zymotic diseases.								
Febricula		2	2					5
Febris intermittens		1	1					5
Febris remittens		6	5			1		54
Constitutional diseases.								
Lumbago		2	2					15
Rheumatismus acutis		1	1					26
Syphilis consecutiva		6	3	3				55
Syphilis primitiva		1	1					28
LOCAL DISEASES.								
Diseases of the nervous system.								
Cephalalgia		1	1					2
Epilepsia		2	2					3
Neuralgia		1	1					7
Pleurodynia		1	1					4
Diseases of the eye.								
Conjunctivitis		1	1					3
Diseases of the circulatory system.								
Morbi valvularum cordis		1		1				1
Diseases of the respiratory system.								
Bronchitis acuta		5	5					38
Catarrhus bronchialis		7	7					28
Hæmoptysis		3	2	1				19
Laryngitis		1	1					2
Phthisis pneumonica chronica		3		3				12
Pneumonia		3	2	1				61
Diseases of the digestive system.								
Diarrhœa acuta		5	5					31
Hepatitis chronica		1	1					9
Hernia		2		2				7
Peritonitis		1				1		1
Tonsillitis		16	16					61
Diseases of the genito-urinary system.								
Calculus		2	2					7
Orchitis		4	3				1	24
Diseases of the locomotive system.								
Synovitis		1		1				5
Diseases of the integumentary system.								
Abscessus		2	2					19
Anthrax		1	1					27
Ecthyma		1	1					2
Furunculus		2	2					5
Paronychia		1	1					14
Diseases of the absorbent system.								
Adenitis		2	2					30
VIOLENT DISEASES AND DEATHS.								
Abrasio		2	2					16
Ambustio		3	3					19

DETAILED STATEMENT—Continued.

Diseases.	Remaining from last quarter.	Admitted.	Discharged to duty.	Invalided.		Died.	Continued to next quarter.	Total number of sick days.
				To hospital.	From service.			
VIOLENT DISEASES AND DEATHS—Cont'd								
Concussio cerebri.....		1	1					1
Congelatio.....		2	2					2
Contusio.....		2	9					65
Fractura.....		1				1		1
Stremma.....		5	5					30
Vulnus contusum.....		1	1					4
Vulnus incisum.....		1	1					23
Vulnus laceratum.....		4	4					32
Total.....		118	102	12		3	1	816

PORTSMOUTH.

Second rate; sails; wood; 546 tons; service, 365 days; strength, 262.

Classification of diseases.	Remaining from last year.	Admitted.	Discharged to duty.	Invalided.		Died.	Remaining at the end of the year.	Total number of sick days.
				To hospital.	From service.			
Zymotic diseases		17	11	6				59
Constitutional diseases	1	18	10	9				153
Diseases of the nervous system		9	7	2				62
Diseases of the eye		3	3					14
Diseases of the ear		2	2					11
Diseases of the circulatory system		3	1	2				33
Diseases of the respiratory system		20	15	5				179
Diseases of the digestive system		34	32	2				191
Diseases of the genito-urinary system		25	18	6			1	217
Diseases of the integumentary system		20	18	1			1	248
Non-malignant tumors and cysts		1	1					31
Poisons		2	1				1	6
Violent diseases and deaths		43	37	6			1	469
Total	1	197	156	39			3	1,672

NOTE.—This vessel was in port 294 days and at sea 71. The average number of days each case was under treatment was 8.4, and the daily average number of sick was 4.5.

REPORT OF VACCINATION.

	Successful.	Unsuccessful.
No evidence of previous examination		5
Presenting good cicatrices		15

AGE TABLE.

	15 to 25	25 to 35.	35 to 45.	45 to 55.	Over 55.
Average number on board	178	54	20	9	1
Number sick	137	36	17	7	1

DETAILED STATEMENT.

Diseases.	Remaining from last quarter.	Admitted.	Discharged to duty.	Invalided.		Died.	Continued to next quarter.	Total number of sick-days.
				To hospital.	From service.			
GENERAL DISEASES.								
Zymotic diseases.								
Febricula		1	1					5
Febris continua simplex		5	4	1				14
Febris enterica		2		2				4
Febris intermittens		3	2	1				13
Febris remittens		5	3	2				19
Vaccina		1	1					4
Constitutional diseases.								
Adynamia		1		1				1
Diabetes		1	1					23
Lumbago	1		1					5
Rheumatismus acutus		9	5	4				68
Rheumatismus chronicus		3	1	2				37
Syphilis consecutiva		2	1	1				5
Syphilis primitiva		2	1	1				13
LOCAL DISEASES.								
Diseases of the nervous system.								
Epilepsia		4	4					19
Mania		2		2				28
Nausea marina		2	2					12
Neuralgia		1	1					3
Diseases of the eye.								
Conjunctivitis		1	1					9
Hordeolum		2	2					5
Diseases of the ear.								
Otitis		2	2					11
Diseases of the circulatory system.								
Palpitatio		3	1	2				33
Diseases of the respiratory system.								
Bronchitis acuta		6	6					36
Catarrhus bronchialis		2	2					15
Laryngitis		4	3	1				18
Phthisis pneumonica chronica		3		3				11
Pleuritis		2	1	1				28
Pneumonia		3	3					71
Diseases of the digestive system.								
Diarrhoea acuta		2	2					29
Dysenteria acuta		1	1					4
Hæmorrhoida		3	2	1				10
Hernia		2	1	1				13
Icterus		1	1					1
Tonsillitis	23		23					124
Vermes		2	2					11
Diseases of the genito-urinary system.								
Chancroides		3	2				1	15
Gonorrhœa		15	12	3				139
Nephritis		1		1				1
Orchitis		3	1	2				43
Phymosis		1	1					3
Urethra strictura		1	1					9
Variocoele		1	1					7
Diseases of the integumentary system.								
Abscessus		7	6	1				85
Furunculus		2	2					10

DETAILED STATEMENT—Continued.

Diseases.	Remaining from last quarter.	Admitted.	Discharged to duty.	Invalided.		Died.	Continued to next quarter.	Total number of sick days.
				To hospital.	From service.			
LOCAL DISEASES—Continued.								
<i>Diseases of the integumentary system—Cont'd.</i>								
Herpes		1	1					13
Onychia		3	3					24
Paronychia		2	2					20
Ulcus		4					1	17
Unguis involutus		1	1					
<i>Non-malignant tumors and cysts.</i>								
Lipoma		1	1					31
POISONS.								
Alcoholismus acutus		2	1				1	6
VIOLENT DISEASES AND DEATHS.								
Amblyopia		3	3					
Contusio		12	12					
Fractura		8	2	6				76
Luxatio		1	1					3
Strenima		5	5					36
Vulnus contusum		4	4					15
Vulnus incisum		1	1					8
Vulnus laceratum		8	8					178
Vulnus punctum		1	1					6
Total	1	197	156	39			3	1,672

PINTA.

[Fourth-rate; screw; iron; 306 tons; service, 365 days; strength, 60.]

Classification of diseases.	Remaining from last year.	Admitted.	Discharged to duty.	Invalided.		Died.	Remaining at the end of the year.	Total number of sick days.
				To hospital.	From service.			
Zymotic diseases		10	9	1				27
Constitutional diseases		2	1	1				5
Diseases of the nervous system		2	1	1				3
Diseases of the respiratory system		3	3					11
Diseases of the digestive system		7	5	1			1	34
Diseases of the genito-urinary system		3	1	2				7
Diseases of the integumentary system		3	2	1				26
Diseases of the absorbent system		1		1				4
Non-malignant tumors and cysts		2		2				2
Violent diseases and deaths		5	5					16
Total		38	27	10			1	132

AGE TABLE.

	15 to 25	25 to 35	35 to 45	45 to 55	Over 55.
Average number on board	27	26	10	4	2
Number sick	9	19	5	5	

DETAILED STATEMENT.

Diseases.	Remaining from last quarter.	Admitted.	Discharged to duty.	Invalided.		Died.	Continued to next quarter.	Total number of sick-days.
			To hospital.	From service.				
GENERAL DISEASES.								
Zymotic diseases.								
Febricula.....		1	1					1
Febris continua simplex.....		1	1					6
Febris intermittens.....		3	3					9
Febris remittens.....		2	1	1				4
Morbilli.....		1	1					3
Vaccina.....		2	2					4
Constitutional diseases.								
Adynamia.....		1		1				1
Lumbago.....		1	1					4
LOCAL DISEASES.								
Diseases of the nervous system.								
Pleurodynia.....		1	1					1
Vertigo.....		1		1				1
Diseases of the respiratory system.								
Bronchitis acuta.....		1	1					4
Bronchitis chronica.....		2	2					7
Diseases of the digestive system.								
Congestio hepatis.....		1	1					12
Constipatio.....		1		1				1
Dyspepsia.....		2	2					3
Gastritis.....		1					1	19
Pharyngitis.....		2	2					3
Diseases of the genito-urinary system.								
Chancroides.....		1		1				1
Orchitis.....		1	1					5
Phymosis.....		1		1				1
Diseases of the integumentary system.								
Abscessus.....		2	1	1				14
Furunculus.....		1	1					6
Diseases of the absorbent system.								
Adenitis.....		1		1				4
Non-malignant tumors and cysts.								
Adenoma.....		1		1				1
Osteoma.....		1		1				1
VIOLENT DISEASES AND DEATHS.								
Contusio.....		2	2					6
Luxatio.....		1	1					4
Stemma.....		2	2					6
Total.....		38	27	10			1	132

64 REPORT OF THE SURGEON-GENERAL OF THE NAVY.

SHENANDOAH.

[Second rate; wood; screw; 929 tons; service, 57 days; strength, 250; strength corrected for

Classification of diseases.	Remaining from last year.	Admitted.	Discharged to duty.	Invalided.		Died.	Remaining at the end of the year.
				To hospital.	From service.		
Zymotic diseases		17	11	3			
Constitutional diseases		2		1	1		3
Diseases of the nervous system		2	1	1			
Diseases of the respiratory system		6	6				
Diseases of the digestive system		9	7	2			
Diseases of the genito-urinary system		2		1	1		
Violent diseases and deaths		7	6	1			
Total		45	31	9	2		3

NOTE.—This vessel was 54 days in port and 3 days at sea during the fourth quarter 1883. The average number of days each case was under treatment was 4.8, and the daily average number of sick 3.7.

REPORT OF VACCINATION.

	Successful.	Unsuccessful.
No evidence of previous examination		
Evidence of former attack of small-pox	30	1

NOTE.—Bovine virus used.

AGE TABLE.

	15 to 25.	25 to 35.	35 to 45.	45 to 55.	Over 55.
Average number on board	23	11	4	1	
Number sick	26	11	7	1	

DETAILED STATEMENT.

Diseases.	Remaining from last quarter.	Admitted.	Discharged to duty.	Invalided.			Continued to next quarter.	Total number of sick.
				To hospital.	From service.	Died.		
GENERAL DISEASES.								
Zymotic diseases.								
Febris enterica		1		1				
Febris intermittens		4	12	12				
Parotitis		12	9	3				
Constitutional diseases.								
Syphilis consecutiva		2		1	1			
LOCAL DISEASES.								
Diseases of the nervous system.								
Epilepsia		1		1				
Insomnia		1	1					

DETAILED STATEMENT—Continued.

Diseases.	Remaining from last quarter.	Admitted.	Discharged to duty.	Invalided.		Died.	Continued to next quarter.	Total number of sick days.
				To hospital.	From service.			
LOCAL DISEASES—Continued.								
<i>Diseases of the respiratory system.</i>								
Is chronic.....		4	4					37
Is bronchialis		1	1					11
Is orax		1	1					2
<i>Diseases of the digestive system.</i>								
Is		2		2				8
Is		4	4					9
Is		3	3					12
<i>Diseases of the genito-urinary system.</i>								
Is strictura		2		1	1			10
LENT DISEASES AND DEATHS.								
.....		1	1					4
.....		1		1				1
.....		1	1					3
Is contusum		2	2					20
Is incisum		2	2					4
Total		45	31	9	2		3	216

SWATARA.

[Third rate; screw; 910 tons; 365 days' service; strength, 190.]

Classification of diseases.	Remaining from last year.	Admitted.	Discharged to duty.	Invalided.		Died.	Remaining at the end of the year.	Total number of sick days.
				To hospital.	From service.			
diseases		38	36	2				130
tional diseases		36	30	4			2	338
of the nervous system		21	18	3				108
of the eye		3	3					7
of the ear		1	1					1
of the teeth		1	1					3
of the circulatory system		3		2		1		3
of the respiratory system		58	49	9				215
of the digestive system		43	38	5				130
of the genito-urinary system		15	12	3				112
of the locomotive system		1	1					7
of the integumentary system		35	35					216
of the absorbent system		2	2					46
Ignant tumors and cysts.		1		1				1
		4	4					14
ases and deaths		51	51					309
Total		313	281	29		1	2	1,640

—This vessel was 341 days in commission, 256 port, 85 sea. The number of days each case or treatment was 5.2, and the daily average number of sick 4.8. The death was from *morbi val-cordia*.

REPORT OF VACCINATION.

	Successful.	Unsuccessful.
No evidence of previous examination	5	18
Presenting good cicatrices	48	20
Evidence of former attack of small-pox	0	3

AGE TABLE.

	15 to 25.	25 to 35.	35 to 45.	45 to 55.	Over 55.
Average number on board	94	73	22	8	2
Number sick	159	114	24	11	5

DETAILED STATEMENT.

Diseases.	Remaining from last quarter.	Admitted.	Discharged to duty.	Invalided.		Died.	Continued to next quarter.	Total number of sick-days.
				To hospital.	From service.			
GENERAL DISEASES.								
Zymotic diseases.								
Febris intermittens		34	34					111
Febris remittens		2	2					17
Parotitis		2		2				3
Constitutional diseases.								
Adynamia		5	5					24
Lumbago		3	3					7
Rheumatismus acutus		16	12	2			2	151
Rheumatismus chronicus		2	2					10
Syphilis consecutiva		6	4	2				80
Syphilis primitiva		3	3					53
Torticollis		1	1					4
LOCAL DISEASES.								
Diseases of the nervous system.								
Cephalalgia		2	2					3
Dementia		1		1				40
Epilepsia		2	1	1				4
Nausea marina		2	2					3
Neuralgia		10	9	1				50
Pleurodynia		2	2					4
Vertigo		2	2					4
Diseases of the eye.								
Conjunctivitis		3	3					7
Diseases of the ear.								
Otitis		1	1					1
Diseases of the teeth.								
Odontalgia		1	1					3
Diseases of the circulatory system.								
Morbi valvularum cordis		2		1		1		2
Varix		1		1				1
Diseases of the respiratory system.								
Asthma		3	2	1				14
Bronchitis acuta		48	35	8				143
Catarrhus bronchialis		8	8					26
Laryngitis		2	2					6
Pleuritis		2	2					21

DETAILED STATEMENT—Continued.

Diseases.	Remaining from last quarter.	Admitted.	Discharged to duty.	Invalided.		Died.	Continued to next quarter.	Total number of sick days.
				To hospital.	From service.			
LOCAL DISEASES—Continued.								
<i>Diseases of the digestive system.</i>								
Cholera morbus		1	1					4
Colica		5	5					6
Constipation		5	5					18
Diarrhœa acuta		19	18	1				32
Dysentery chronica		3		3				28
Dyspepsia		3	2	1				18
Gastritis		1	1					3
Hæmorrhoids		1	1					5
Hernia		1	1					1
Pharyngitis		1	1					1
Tonsillitis		2	2					11
Verues		1	1					3
<i>Diseases of the genito-urinary system.</i>								
Gonorrhœa		7	6	1				53
Orchitis		8	6	2				59
<i>Diseases of the locomotive system.</i>								
Hydrops articolorum		1	1					7
<i>Diseases of the integumentary system.</i>								
Abscessus		13	13					94
Eczema		1	1					6
Furunculus		19	19					102
Ulcus		2	2					14
<i>Diseases of the absorbent system.</i>								
Adenitis		2	2					46
<i>Non-malignant tumors and cysts.</i>								
Osteoma		1		1				1
POISONS.								
Alcoholismus acutus		4	4					14
VIOLENT DISEASES AND DEATHS.								
Ambustio		1	1					3
Contusio		20	20					116
Stremma		9	9					44
Vulnus contusum		11	11					103
Vulnus incisum		6	6					35
Vulnus laceratum		1	1					1
Vulnus punctum		3	3					7
Total		313	281	20		1	2	1,640

Surgeon Thomas N. Penrose, in his report for the fourth quarter, remarks that the total number of sick for the quarter has been quite small, although the vessel has been in an unhealthy climate. This condition is mainly attributable to the hygienic measures observed. On the arrival of the ship in Haytian waters the following sanitary rules were proposed and issued as a general order by the commanding officer of the vessel:

1. No person to be out of the ship after sundown.
2. No boating during the heat of the day.
3. Rigid inspection to be made of the bum-boats.

4. Awnings to be triced up in the morning watch until completion of evolutions at 7.30 a. m.; also to be triced up one hour previous to sunset, then housed before dark.
5. Men sleeping on deck to be kept well amidships.
6. Encouragement given to men to bathe during morning watch, with ample time allowed for this purpose.
7. At the morning inspection officers to be careful that men have flannel next their bodies and that the clothing is always clean.
8. Bedding to be aired weekly.
9. Distilled water alone to be used for drinking, and no water from shore to be received on board for any purpose.
10. The berth deck to be scrubbed with hot fresh water, and no more to be used than necessary. It is important that the deck be kept dry.
11. The men to be compelled to change their clothing at once should their clothing become wet.
12. Windsails to be kept up and carefully trimmed to the wind.
13. The ship's head to be kept scrupulously clean and daily disinfected.
14. Abundance of fresh provisions to be provided for the crew.

SARATOGA.

[Third rate; wood; sails, 757; strength, 241; service, 365 days.]

Classification of diseases.	Remaining from last year.	Admitted.	Discharged to duty.	Invalided.		Died.	Remaining at the end of the year.	Total number of sick-days.
				To hospital.	From service.			
Zymotic diseases		8	6	1		1		96
Constitutional diseases		20	15	5				152
Diseases of the nervous system		6	3	3				18
Diseases of the eye		3	3					44
Diseases of the circulatory system		1	1					9
Diseases of the respiratory system		23	17	6				118
Diseases of the digestive system		20	18	2				129
Diseases of the genito-urinary system		10	9	1				116
Diseases of the locomotive system		2	1	1				91
Diseases of the integumentary system		17	15	2				158
Diseases of the absorbent system		4	4					66
Poisons		1	1					3
Violent diseases and deaths		31	25	6				179
Total		146	118	27		1		1,176

NOTE.—This vessel was in port 268 and at sea 97 days. The average number of days each case was under treatment was 8.0, and the daily average number of sick was 3.2. The death was from *febris continua simplex*.

AGE TABLE.

	15 to 25.	25 to 35.	35 to 45.	45 to 55.	Over 55
Average number on board	155	56	22	7	1
Number sick	95	29	16	5	1

DETAILED STATEMENT.

Diseases.	Remaining from last quarter.	Admitted.	Discharged to duty.	Invalided.		Died.	Continued to next quarter.	Total number of sick-days.
				To hospital,	From service.			
GENERAL DISEASES.								
<i>Zymotic diseases.</i>								
Erysipelas		2	2					43
Febris continua simplex		4	3			1		19
Febris intermittens		1	1					22
Febris remittens		1		1				9
<i>Constitutional diseases.</i>								
Adynamia		6	5	1				37
Rheumatismus acutus		5	4	1				51
Scrofula		1	1					5
Syphilis consecutiva		2	1	1				18
Syphilis primitiva		4	2	2				27
Myalgia		2	2					14
LOCAL DISEASES.								
<i>Diseases of the nervous system.</i>								
Dementia		1		1				2
Epilepsia		2		2				2
Neuralgia		3	3					14
<i>Diseases of the eye.</i>								
Conjunctivitis		3	3					44
<i>Diseases of the circulatory system.</i>								
Palpitatio		1	1					9
<i>Diseases of the respiratory system.</i>								
Bronchitis acuta		8	6	2				27
Bronchitis chronica		3	1	2				32
Catarrhus bronchialis		9	8	1				32
Laryngitis		1	1					3
Pleuritis		1	1					12
Pneumonia		1		1				12
<i>Diseases of the digestive system.</i>								
Cholera morbus		1	1					3
Colica		1	1					2
Constipatio		1	1					7
Diarrhoea acuta		1	1					4
Dyspepsia		2	2					8
Enteritis		1	1					12
Gastritis		2	2					26
Hæmorrhoids		2	1	1				16
Hepatitis acuta		1	1					4
Hernia		2	1	1				12
Tonsillitis		4	4					22
Vermes		1	1					3
Hæmorrhage from bowels		1	1					10
<i>Diseases of the genito-urinary system.</i>								
Chancroides		1	1					31
Cystitis		1	1					16
Epididymitis		1	1					13
Gonorrhœa		4	3	1				31
Orchitis		2	2					29
Paraphymosis		1	1					5
<i>Diseases of the locomotive system.</i>								
Synovitis		2	1	1				91

DETAILED STATEMENT—Continued.

Diseases.	Remaining from last quarter.	Admitted.	Discharged to duty.	Invalided.		Died.	Continued to next quarter.	Total number of sick-days.
				To hospital.	From service.			
LOCAL DISEASES—Continued.								
<i>Diseases of the integumentary system.</i>								
Abcessus.....		4	4					29
Eczema.....		1	1					18
Furunculus.....		6	6					58
Herpes.....		1	1					12
Paronychia.....		2	2					18
Psoriasis.....		1		1				2
Ulcus.....		2	1	1				21
<i>Diseases of the absorbent system.</i>								
Adenitis.....		4	4					66
POISONS.								
Alcoholismus acutus.....		1	1					3
VIOLENT DISEASES AND DEATHS.								
Ambustio.....		2		2				3
Contusio.....		14	13	1				61
Fractura.....		1		1				1
Strenna.....		5	4	1				19
Vulnus contusum.....		5	5					39
Vulnus incisum.....		1	1					6
Vulnus laceratum.....		3	2	1				50
Total.....		146	118	27		1		1,176

Passed Assistant Surgeon C. A. Siegfried reports two cases of idiopathic erysipelas affecting the face, the original case occurring on the arrival of the vessel at Teneriffe, and the second following in the case of an attendant upon the primary case. Both cases recovered.

SAINT LOUIS.

[Second rate; sails; wood; 431 tons; service, 365 days; strength, 99.]

Classification of diseases.	Remaining from last year.	Admitted.	Discharged to duty.	Invalided.		Died.	Remaining at the end of the year.	Total number of sick-days.
				To hospital.	From service.			
Zymotic diseases.....		28	26	2				132
Constitutional diseases.....		9	6	2			1	60
Diseases of the respiratory system.....		2	1	1				21
Diseases of the digestive system.....		6	5	1				14
Diseases of the genito-urinary system.....		3	1	2				16
Diseases of the integumentary system.....		4	4					19
Poisons.....	1							1
Violent diseases and deaths.....		10	9	1				69
Total.....	1	62	53	9			1	332

NOTE.—This vessel is the receiving-ship at Philadelphia. The average number of days each case was under treatment was 5.2, and the daily average number of sick, .9.

REPORT OF VACCINATION.

	Successful.	Unsuccessful.
No evidence of previous examination.....	70	74
Presenting good cicatrices.....	112	160
Evidence of former attack of small-pox.....	7	11

NOTE.—Bovine virus used.

AGE TABLE.

	15 to 25.	25 to 35.	35 to 45.	45 to 55.	Over 55.
Average number on board.....	34	28	20	12	5
Number sick.....	32	14	10	3	4

DETAILED STATEMENT.

Diseases.	Remaining from last quarter.	Admitted.	Discharged to duty.	Invalided.		Died.	Continued to next quarter.	Total number of sick-days.
			To hospital.	From service.				
GENERAL DISEASES.								
<i>Zymotic diseases.</i>								
Diphtheria		1		1				1
Febricula		1	1					1
Febris intermittens		21	21					108
Febris remittens		1	1					2
Morbili		1		1				1
Vaccina		3	3					17
<i>Constitutional diseases.</i>								
Adynamia		2	1				1	23
Rheumatismus acutus		3	2	1				24
Rheumatismus chronicus		2	2					10
Syphilis consecutiva		2	2	1				3
<i>Diseases of the respiratory system.</i>								
Catarrhus bronchialis		1		1				1
Pneumonia		1	1					20
<i>Diseases of the digestive system.</i>								
Dysenteria acuta		3	3					9
Enteritis		1	1					2
Fistula ani		1		1				2
Tonsillitis		1	1					1
<i>Diseases of the genito-urinary system.</i>								
Orchitis		1	1					14
Urethrae strictura		2		2				2
<i>Diseases of the integumentary system.</i>								
Abcessus		1	1					4
Furunculus		2	2					13
Onychia		1	1					2
POISONS.								
Alcoholismus acutus	1		1					1
VIOLENT DISEASES AND DEATHS.								
Contusio		2	1	1				5
Luxatio		1	1					1
Stemma		3	3					7
Vulnus contusum		1	1					25
Vulnus incisum		2	2					13
Vulnus laceratum		1	1					18
Total	1	62	53	9			1	332

Surgeon A. T. Price, in his report for the fourth quarter of 1883, reports the following cases of interest:

C. G., third cabin boy; age 17 $\frac{3}{4}$; native of Germany; enlisted November 20, 1883; admitted December 7 with tonsillitis, which on the next day proved to be a case of diphtheria; the exudate covered both tonsils, accompanied with fever and delirium. He was transferred to the hospital, and the cot in which he lay was disinfected. As this boy had been on board ship for sixteen days previous to the outbreak of his disease it was considered probable that the disease originated from local influences. This case was followed December 16 by the following suspicious one of—

R. B. B., third cabin boy; age 16 $\frac{1}{2}$; native of New Jersey; enlisted December 3, 1883; admitted with catarrhus. There is a sore throat with a suspicious exudate on the right tonsil, and was transferred to the hospital on the day of his admission.

TALLAPOOSA.

[Fourth rate; paddle; wood; 650 tons; service, 385 days; strength, 125.]

Classification of diseases.	Remaining from last year.	Admitted.	Discharged to duty.	Invalided.		Died.	Remaining at the end of the year.	Total number of sick-days.
				To hospital.	From service.			
Zymotic diseases	12	11	12	1				78
Constitutional diseases	12	18	15	5				98
Diseases of the nervous system		8	7	1				42
Diseases of the eye		1	1	1				3
Diseases of the circulatory system		3	1	2				17
Diseases of the respiratory system		13	11	12				63
Diseases of the digestive system		30	25	5				153
Diseases of the genito-urinary system		9	9					86
Diseases of the integumentary system		9	8	1				23
Diseases of the absorbent system		4	4					27
Poisons		2	2					13
Violent diseases and deaths		17	15	2				92
Total	4	125	110	19				695

NOTE.—In port 276 days; at sea 89. The average number of days each case was under treatment, 5.3, and the daily average number of sick, 1.9.

AGE TABLE.

	15 to 25.	25 to 35.	35 to 45.	45 to 55.	Over 55.
Average number on board	50	46	18	11	.....
Number sick	59	47	11	12	.....

DETAILED STATEMENT.

Diseases.	Remaining from last quarter.	Admitted.	Discharged to duty.	Invalided.		Died.	Continued to next quarter.	Total number of sick-days.
				To hospital.	From service.			
GENERAL DISEASES.								
Zymotic diseases.								
Febris enterica		1		1				15
Febris intermittens		1	1					2
Febris remittens		8	8					48
Vaccina	2	1	3					1

DETAILED STATEMENT—Continued.

Diseases.	Remaining from last quarter.	Admitted.	Discharged to duty.	Invalided d.		Died.	Continued to next quarter.	Total number of sick-days.
				To hospital.	From service.			
GENERAL DISEASES—Continued.								
Constitutional diseases.								
Rheumatismus acutus		13	12	1				81
Rheumatismus chronicus	1		1					2
Syphilis consecutiva	1	4	2	3				13
Syphilis primitiva		1		1				2
LOCAL DISEASES.								
Diseases of the nervous system.								
Apoplexia		1		1				1
Cephalalgia		2	2					12
Neuralgia		2	2					9
Pleurodynia		3	3					20
Diseases of the eye.								
Conjunctivitis		1	1					3
Diseases of the circulatory system.								
Angina pectoris		1		1				3
Morbi valvularum cordis		1		1				4
Palpitatio		1	1					10
Diseases of the respiratory system.								
Bronchitis acuta		4	4					27
Catarrhus bronchialis		6	6					17
Phthisis pneumonica chronica		1		1				2
Pneumonia		2	1	1				17
Diseases of the digestive system.								
Colica		2	2					6
Constipatio		1	1					7
Diarrhoea acuta		14	12	2				90
Diarrhoea chronica		2	1	1				16
Dysenteria acuta		1		1				1
Dyspepsia		2	2	1				9
Hæmorrhoids		2	2					6
Hernia		2	1	1				5
Pharyngitis		1	1					1
Tonsillitis		3	3					13
Diseases of the genito-urinary system.								
Balanitis		1	1					4
Gonorrhœa		4	4					32
Hæmaturia		1	1					5
Orchitis		3	3					45
Diseases of the integumentary system.								
Abcessus		2	2					3
Eczema		1		1				3
Furunculus		3	3					6
Ulcus		1	1					3
Dranunculus		2	2					8
Diseases of the absorbent system.								
Adenitis		4	4					27
POISONS.								
Alcoholismus acutus		2	2					13

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DETAILED STATEMENT—Continued.

Diseases.	Remaining from last quarter.	Admitted.	Discharged to duty.	Invalided.		Died.	Continued to next quarter.	Total number of sick-days.
				To hospital.	From service.			
VIOLENT DISEASES AND DEATHS.								
Abrasio.....		1	1					1
Concussio cerebri.....		1	1					15
Contusio.....		5	5					17
Fractura.....		1		1				5
Stremma.....		4	4					38
Vulnus contusum.....		3	2	1				10
Vulnus incisum.....		1	1					3
Vulnus punctum.....		1	1					3
Total.....	4	125	110	19				695

VANDALIA.

[Second rate; wood; screw; 981 tons; service, 365 days; strength, 208.]

Classification of diseases.	Remaining from last year.	Admitted.	Discharged to duty.	Invalided.		Died.	Remaining at the end of the year.	Total number of sick-days.
				To hospital.	From service.			
Zymotic diseases		19	18	1				173
Constitutional diseases		30	21	9				176
Diseases of the nervous system		15	14	1				67
Diseases of the eye		5	2	3				32
Diseases of the ear		6	6					39
Diseases of the teeth		3	3					8
Diseases of the circulatory system		4	1	3				137
Diseases of the respiratory system		19	13	6				144
Diseases of the digestive system		43	43					226
Diseases of the genito-urinary system		9	7	2				48
Diseases of the integumentary system		15	11	4				59
Diseases of the absorbent system		1	1					10
Non-malignant tumors and cysts		1	1					24
Poisons		2	1	1				4
Violent diseases and deaths	1	37	33	2			3	364
Total	1	209	175	32			3	1,511

NOTE.—This vessel was in port 260 days, 105 days at sea. The average number of days under treatment of each case was 7.1, and the daily average number of sick 4.1.

REPORT OF VACCINATION.

	Successful.	Unsuccessful.
No evidence of previous examination	1	
Presenting good cicatrices	7	4

AGE TABLE.

	15 to 25.	25 to 35.	35 to 45.	45 to 55.	Over 55.
Average number on board	95	64	33	13	3
Number sick	93	67	30	14	6

DETAILED STATEMENT.

Diseases.	Remaining from last quarter.	Admitted.	Discharged to duty.	Invalided.		Died.	Continued to next quarter.	Total number of sick days.
			To hospital.	From service.				
LOCAL DISEASES—Continued.								
Zymotic diseases.								
Febricula.....		5	5					17
Febris intermittens.....		10	10					53
Febris remittens.....		4	3	1				103
Constitutional diseases.								
Adynamia.....		16	12	4				88
Lumbago.....		1	1					2
Rheumatismus acutus.....		4	4					21
Rheumatismus chronicus.....		4	3	1				24
Syphilis consecutiva.....		5	1	4				41
LOCAL DISEASES.								
Diseases of the nervous system.								
Cephalalgia.....		3	3					5
Epilepsia.....		1		1				15
Nausea marina.....		2	2					2
Neuralgia.....		8	8					35
Pleurodynia.....		1	1					10
Diseases of the eye.								
Amanrosis.....		2		2				24
Hordeolum.....		1	1					6
Ophthalmia.....		2	1	1				2
Diseases of the ear.								
Otalgia.....		2	2					22
Otitis.....		1	1					3
Otorrhoea.....		2	2					9
Surditas.....		1	1					5
Diseases of the teeth.								
Odontalgia.....		2	2					6
Parulis.....		1	1					2
Diseases of the circulatory system.								
Palpitatio.....		4	1	3				137
Diseases of the respiratory system.								
Asthma.....		6	5	1				20
Bronchitis acuta.....		3	2	1				28
Catarrhus bronchialis.....		6	6					13
Phthisis pneumonica chronica.....		2		2				75
Pneumonia.....		2		2				8
Diseases of the digestive system.								
Cholera morbus.....		4	4					7
Colica.....		3	3					20
Constipatio.....		2	2					5
Diarrhoea acuta.....		19	19					115
Dysinteria acuta.....		1	1					13
Dyspepsia.....		1	1					11
Emorrhoids.....		2	2					10
Pharyngitis.....		6	6					19
Tonsillitis.....		5	5					26
Diseases of the genito-urinary system.								
Cystitis.....		1	1					2
Gonorrhoea.....		5	4	1				35
Urethrae strictura.....		2	1	1				10
Varicocele.....		1	1					1

DETAILED STATEMENT—Continued.

Diseases.	Remaining from last quarter.	Admitted.	Discharged to duty.	Invalided.		Died.	Continued to next quarter.	Total number of sick days.
				To hospital.	From service.			
LOCAL DISEASES—Continued.								
<i>Diseases of the integumentary system.</i>								
Abcessus		2	1	1				3
Anthrax		1		1				8
Ecthyma		1		1				1
Furunculus		7	7					20
Herpes		1		1				3
Herpes		2	2					21
Ulcus		1	1					3
Urticaria								
<i>Diseases of the absorbent system.</i>								
Adenitis		1	1					10
<i>Non-malignant tumors and cysts.</i>								
Cystis		1	1					24
POISONS.								
Alcoholismus acutus		1	1					2
Alcoholismus chronicus		1		1				2
VIOLENT DISEASES AND DEATHS.								
Abrasio		1	1					11
Ambustio		2	2					6
Contusio		14	13				1	142
Fractura		1		1				1
Strenua		11	11					62
Vulnus laceratum	1	5	4	1			1	123
Vulnus punctum		3	2				1	19
Total	1	209	175	32			3	1,511

WABASH.

[First rate; screw; wood; 8,000 tons; service, 365 days; strength, 190; receiving-ship, Boston.]

Classification of diseases.	Remaining from last year.	Admitted.	Discharged to duty.	Invalided.		Died.	Remaining at the end of the year.	Total number of sick days.
				To hospital.	From service.			
Zymotic diseases		13	7	6				45
Constitutional diseases		11	5	6				32
Diseases of the nervous system		1	1					5
Diseases of the eye		1		1				7
Diseases of the teeth		1	1					2
Diseases of the circulatory system		1	1					1
Diseases of the respiratory system		14	11	2		1		82
Diseases of the digestive system		29	25	4				93
Diseases of the genito-urinary system		7	4	3				25
Diseases of the integumentary system		2		1			1	17
Diseases of the absorbent system		2	1	1				4
Poisons		1	1					2
Violent diseases and deaths		19	14	4			1	74
Total		102	71	28		1	2	389

NOTE.—The average number of days each case was under treatment was 3.8, and the daily average number of sick was 1.0. One death from pneumonia.

REPORT OF VACCINATION.

	Successful.	Unsuccessful.
Presenting good cicatrices	344	205
Evidence of former attack of small-pox	0	12

NOTE.—Bovine virus used.

AGE TABLE.]

	15 to 25.	25 to 35.	35 to 45.	45 to 55.	Over 55.
Average number on board	45	79	48	18	5
Number sick	80	36	20	12	4

DETAILED STATEMENT.

Diseases.	Remaining from last quarter.	Admitted.	Discharged to duty.	Invalided.		Died.	Continued to next quarter.	Total number of sick-days.
				To hospital.	From service.			
GENERAL DISEASES.								
Zymotic diseases.								
Erysipelas		3	1	2				11
Febris enterica		1		1				1
Febris intermittens		7	5	2				28
Parotitis		1		1				1
Scarlatina		1	1					4
Constitutional diseases.								
Adynamia		1		1				1
Rheumatismus acutus		1		1				1
Rheumatismus chronicus		7	5	2				28
Syphilis consecutiva		2		2				2
LOCAL DISEASES.								
Diseases of the nervous system.								
Vertigo		1	1					5
Diseases of the eye.								
Conjunctivitis		1	1					7
Diseases of the teeth.								
Odontalgia		1	1					2
Diseases of the circulatory system.								
Palpitation		1	1					1
Diseases of the respiratory system.								
Bronchitis acuta		3	3					21
Bronchitis chronica		4	3	1				32
Catarrhus bronchialis		3	3					9
Phthisis pneumonica chronica		2	1	1				8
Pneumonia		2	1			1		13
Diseases of the digestive system.								
Cholera morbus		2	2					6
Colica		8	7	1				24
Constipation		1	1					3
Diarrhoea acuta		3	2	1				7
Diarrhoea chronica		1	1					1
Icterus		1	1					7
Tonsillitis		13	11	2				66

DETAILED STATEMENT—Continued.

Diseases.	Remaining from last quarter.	Admitted.	Discharged to duty.	Invalided.		Died.	Continued to next quarter.	Total number of sick-days.
				To hospital.	From service.			
LOCAL DISEASES—Continued.								
<i>Diseases of the genito-urinary system.</i>								
Albuminuria		1		1				1
Gonorrhœa		2	2					10
Nephritis		1	1					7
Orchitis		1	1					5
Urethræ strictura		1		1				1
Prostatic catarrh		1		1				1
<i>Diseases of the integumentary system.</i>								
Furunculus		2		1			1	17
<i>Diseases of the absorbent system.</i>								
Adenitis		2	1	1				4
POISONS.								
Alcoholismus acutus		1	1					2
VIOLENT DISEASES AND DEATHS.								
Ambustio		1	1					12
Contusio		3	3					15
Strenuus		10	7	2			1	32
Vulnus contusum		2	1	1				3
Vulnus incisum		1	1					4
Vulnus laceratum		2	1	1				6
Total		102	71	28		1	2	389

WYANDOTTE.

[Fourth rate; screw; iron; 550 tons; strength, 106; service, 365 days.]

Classification of diseases.	Remaining from last year.	Admitted.	Discharged to duty.	Invalided.		Died.	Remaining at the end of the year.	Total number of sick-days.
				To hospital.	From service.			
Zymotic diseases		23	12	10			1	83
Constitutional diseases		7	2	5				21
Diseases of the respiratory system		22	1			1		6
Diseases of the digestive system		23	12	1				25
Diseases of the genito-urinary system		3		3				3
Diseases of the integumentary system		1	1					4
Diseases of the absorbent system		1		1				1
Poisons		1	1					3
Violent diseases and deaths		9	3	4		1	1	109
Total		50	22	24		2	2	255

NOTE.—This vessel was at the navy-yard, Washington, during the entire year. The deaths were from drowning and pulmonary apoplexy. The average number of days each case was under treatment was 5.1, and the daily average number of sick was .69.

REPORT OF VACCINATION.

	Successful.	Unsuccessful.
No evidence of previous examination	5	2
Presenting good cicatrices	23	9
Evidence of former attack of small-pox	3	1

AGE TABLE.

	15 to 25.	25 to 35.	35 to 45.	45 to 55.	Over 55.
Average number on board	48	37	11	9	6
Number sick	17	13	5	9	6

DETAILED STATEMENT.

Diseases.	Remaining from last quarter.	Admitted.	Discharged to duty.	Invalided.		Died.	Continued to next quarter.	Total number of sick-days.
				To hospital.	From service.			
GENERAL DISEASES.								
Zymotic diseases.								
Catarrhus epidemicus		4	3	1				14
Febris intermittens		17	8	9				55
Febris remittens		1	1					6
Morbilli		1					1	6
Constitutional diseases.								
Adynamia		2	1	1				8
Lumbago		2		2				2
Rheumatismus acutus		1	1					9
Rheumatismus chronicus		1		1				1
Syphilis primitiva		1		1				1
LOCAL DISEASES.								
Diseases of the respiratory system.								
Bronchitis acuta		1	1					5
Pulmonary apoplexy		1				1		1
Diseases of the digestive system.								
Diarrhœa acuta		1		1				1
Dyspepsia		1	1					12
Tonsillitis		1	1					12
Diseases of the genito-urinary system.								
Gonorrhœa		2		2				2
Orchitis		1		1				1
Diseases of the integumentary system.								
Abscessus		1	1					4
Diseases of the absorbent system.								
Adenitis		1		1				1
POISONS.								
Alcoholismus acutus		1	1					3
VIOLENT DISEASES AND DEATHS.								
Contusio		3	1	2				23
Fractura		1		1				1
Stremma		1	1					11
Submersio		1				1		1
Vulnus contusum		1					1	45
Vulnus incisum		2	1	1				28
Total		50	22	24		2	2	255

YANTIC.

[Third rate; wood; screw; 410 tons: service, 365 days; strength, 148.]

Classification of diseases.	Remaining from last year.	Admitted.	Discharged to duty.	Invalided.		Died.	Remaining at the end of the year.	Total number of sick days.
				To hospital.	From service.			
Zymotic diseases		13	11	2				47
Constitutional diseases		37	31	6				284
Diseases of the nervous system		12	11			1		48
Diseases of the eye		2	1	1				9
Diseases of the ear		1	1					6
Diseases of the respiratory system		14	13	1				60
Diseases of the digestive system		20	18	2				45
Diseases of the genito-urinary system		8	5	3				32
Diseases of the integumentary system		23	21	2				112
Diseases of the absorbent system		2	2					32
Poisons		9	7	2				42
Violent diseases and deaths		20	20					123
Total		161	141	19		1		835

† NOTE.—This vessel was 249 days in port and 116 at sea. The number of days each case was under treatment was 5.1, and the daily average number of sick was 2.2.

AGE TABLE.

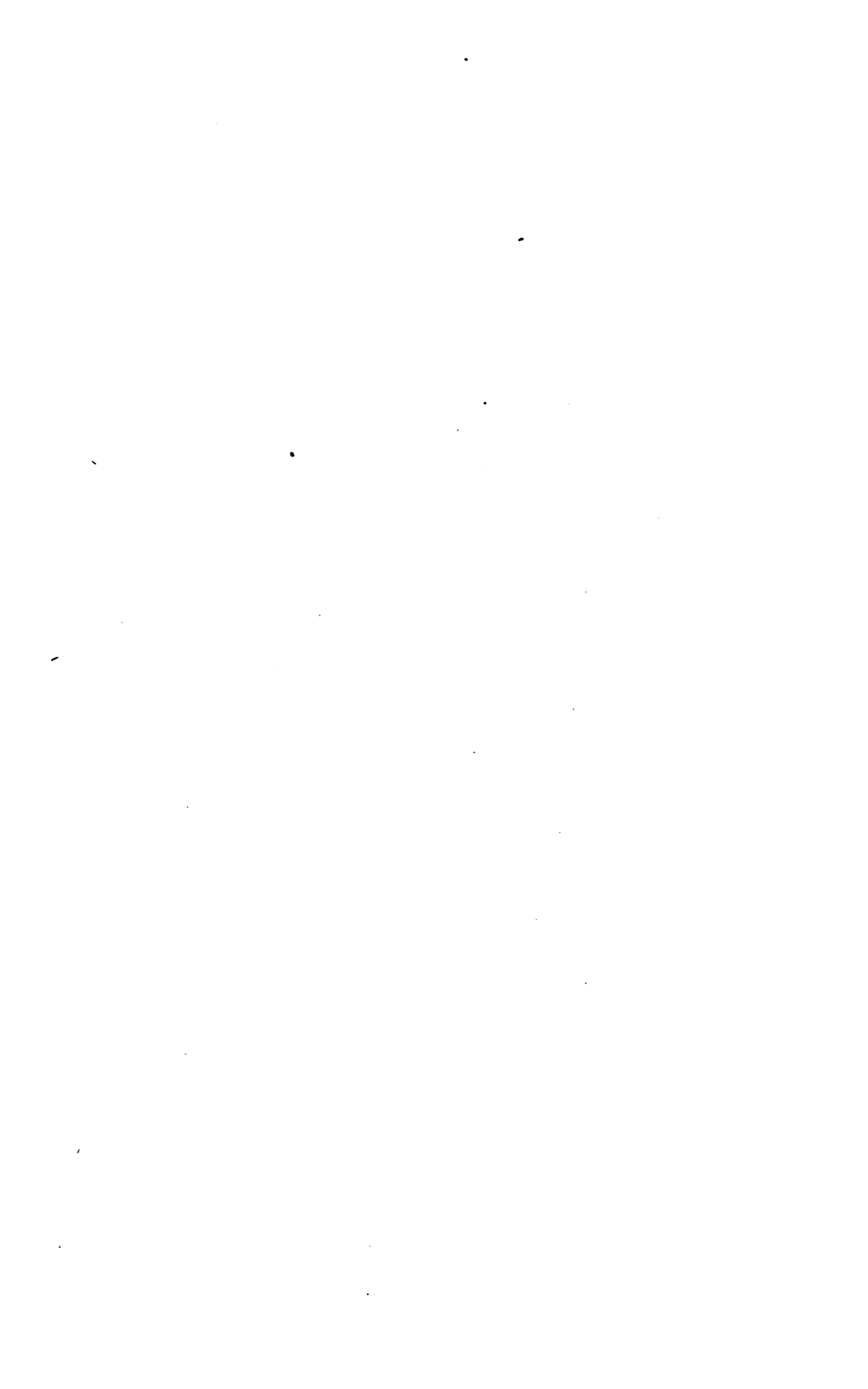
	15 to 25.	25 to 35.	35 to 45.	45 to 55.	Over 55.
Average number on board	52	62	25	6	2
Number sick	55	67	23	9	7

DETAILED STATEMENT.

Diseases.	Remaining from last quarter.	Admitted.	Discharged to duty.	Invalided.		Died.	Continued to next quarter.	Total number of sick days.
				To hospital.	From service.			
GENERAL DISEASES.								
<i>Zymotic diseases.</i>								
Erysipelas.....		1		1				6
Febris continua simplex.....		2	2					5
Febris intermittens.....		7	6	1				19
Febris remittens.....		2	2					16
Variola.....		1		1				1
<i>Constitutional diseases.</i>								
Anæmia.....		4	2	2				69
Lumbago.....		3	3					12
Podagra.....		5	5					23
Rheumatismus chronicus.....		20	18	2				140
Scrofula.....		1		1				14
Syphilis consecutiva.....		2	2					15
Syphilis primitiva.....		2	1	1				11
LOCAL DISEASES.								
<i>Diseases of the nervous system.</i>								
Apoplexia.....		1				1		1
Cephalalgia.....		4	4					7
Nausea marina.....		1	1					3
Neuralgia.....		4	4					20
Paralysis.....		1	1					3
Vertigo.....		1	1					10

DETAILED STATEMENT—Continued.

Diseases.	Remaining from last quarter.	Admitted.	Discharged to duty.	Invalided.		Died.	Continued to next quarter.	Total number of sick-days.
				To hospital.	From service.			
LOCAL DISEASES—Continued.								
<i>Diseases of the eye.</i>								
Conjunctivitis		2	1	1				9
<i>Diseases of the ear.</i>								
Otalgia		1	1					1
<i>Diseases of the respiratory system.</i>								
Bronchitis acuta.....		6	5	1				30
Catarrhus bronchialis.....		3	3	1				10
Catarrhus nasalis.....		4	4					13
Pleuritis		1	1					7
<i>Diseases of the digestive system.</i>								
Colica		7	7					13
Constipatio		2	2					3
Dyspepsia		1	1					4
Tonsillitis		10	8	2				25
<i>Diseases of the genito-urinary system.</i>								
Gonorrhœa		8	5	3				32
<i>Diseases of the integumentary system.</i>								
Abcessus		5	4	1				24
Furunculous.....		12	12					60
Herpes		1	1					7
Pernio		1	1					8
Ulcus		3	2	1				11
Urticaria		1	1					2
<i>Diseases of the absorbent system.</i>								
Adenitis		2	2					32
POISONS.								
Alcoholismus acutus.....		8	6	2				35
Venena		1	1					7
VIOLENT DISEASES AND DEATHS.								
Abrasio.....		1	1					5
Ambustio		1	1					3
Contusio		9	9					44
Stremma		3	3					10
Vulnus contusum.....		2	2					29
Vulnus incisum		3	3					19
Vulnus punctum.....		1	1					13
Total		161	141	19		1		835



SANITARY CONDITION
OF THE
SOUTH ATLANTIC STATION.



THE SOUTH ATLANTIC SQUADRON.

The vessels employed on this station were the Brooklyn (flag-ship), Galena, and Nipsic.

The total force employed for the entire year was 673.

The loss of strength of the total force was—

From invaliding, 66, or at the rate of 98 per 1,000.

From deaths, 1, or at the rate of 1.4 per 1,000.

The loss of effective force represented by the number of cases treated was 686, with 5,478 sick-days, giving an average of 7.9 days for each case, with a daily average number of sick of 15.

The admissions for treatment per 1,000 of the mean strength was at the rate of 1019, and the following table presents the ratio per 1,000 for each class of diseases.

Total force.....	673
Admissions, per 1,000.....	1019+
Zymotic diseases.....	133
Constitutional diseases.....	126
Diseases of the nervous system.....	54
Diseases of the eye.....	19
Diseases of the ear.....	2
Diseases of the teeth.....	1
Diseases of the circulatory system.....	8
Diseases of the respiratory system.....	115
Diseases of the digestive system.....	145
Diseases of the genito-urinary system.....	84
Diseases of the locomotive system.....	5
Diseases of the integumentary system.....	69
Diseases of the absorbent system.....	41
Non-malignant tumors and cysts.....	0
Poisons.....	20
Violent diseases and deaths.....	182
Feigned diseases.....	0

SUMMARY SOUTH ATLANTIC STATION.

[Strength, 673; service, 365 days.]

Classification of diseases.	Remaining from last year.	Admitted.	Discharged to duty.	Invalided.			Remaining at the end of the year.	Total number of sick-days.
				To hospital.	From service.	Died.		
Zymotic diseases.....	1	89	80	9			1	420
Constitutional diseases.....	7	78	67	18				818
Diseases of the nervous system.....	3	34	32	5				310
Diseases of the eye.....		13	12				1	87
Diseases of the ear.....		2	2					5
Diseases of the teeth.....		1	1					5
Diseases of the circulatory system.....	2	4	1	5				155
Diseases of the respiratory system.....	7	74	73	7			1	657
Diseases of the digestive system.....	3	95	89	7			2	444
Diseases of the genito-urinary system.....	1	56	48	6			3	606
Diseases of the locomotive system.....		4	3	1				26
Diseases of the integumentary system.....	1	46	47					326
Diseases of the absorbent system.....		28	23	4			2	718
Poisons.....		14	13	1				41
Violent diseases and deaths.....	2	121	118	3		1	1	860
Total.....	27	659	608	66		1	11	5,478

REPORT OF VACCINATION.

	Successful.	Unsuccessful.
No evidence of previous examination.....	5	16
Presenting good cicatrices.....	7	9
Evidence of former attack of small-pox.....	1	

AGE TABLE.

	15 to 25.	25 to 35.	35 to 45.	45 to 55.	Over 55.
Average number on board.....	307	248	83	31	4
Number sick.....	266	267	95	34	4

DETAILED STATEMENT.

Diseases.	Remaining from last quarter.	Admitted.	Discharged to duty.	Invalided.		Died.	Continued to next quarter.	Total number of sick-days.
				To hospital.	From service.			
GENERAL DISEASES.								
Zymotic diseases.								
Febricula.....		9	9					27
Febris continua simplex.....		20	19	1				91
Febris intermittens.....	1	47	43	4			1	231
Febris remittens.....		4	3	1				16
Parotitis.....		2	2					20
Scarlatina.....		1		1				3
Vaccina.....		4	4					26
Varicella.....		1		1				1
Variola.....		1		1				5
Constitutional diseases.								
Adynamia.....		5	4	1				92
Anæmia.....		1		1				32
Lumbago.....	2	3	3	2				17
Rheumatismus acutus.....	1	33	32	2				233
Rheumatismus chronicus.....	2	24	20	6				274
Senectus.....		1		1				1
Syphilis consecutiva.....	2	10	8	4				168
Syphilis primitiva.....		1		1				1
LOCAL DISEASES.								
Diseases of the nervous system.								
Cephalalgia.....		7	7					17
Dementia.....		1		1				1
Epilepsia.....		5	3	2				166
Insolatio.....		1	1					4
Insomnia.....		1	1					3
Nausea marina.....		2	2					4
Neuralgia.....	3	14	16	1				102
Paralysis.....		1		1				5
Sciatica.....		1	1					5
Vertigo.....		1	1					3
Diseases of the eye.								
Conjunctivitis.....		4	4					18
Hordeolum.....		5	5					11
Iritis.....		3	2				1	46
Retinitis.....		1	1					12
Diseases of the ear.								
Otalgia.....		1	1					3
Otitis.....		1	1					2

DETAILED STATEMENT—Continued.

Diseases.	Remaining from last quarter.	Admitted.	Discharged to duty.	Invalided.		Died.	Continued to next quarter.	Total number of sick-days.
				To hospital.	From service.			
LOCAL DISEASES—Continued.								
<i>Diseases of the teeth.</i>								
Odontalgia.....		1	1					5
<i>Diseases of the circulatory system.</i>								
Morbi valvularum cordis		2		2				37
Palpitatio	2	1		3				117
Syncope		1	1					1
<i>Diseases of the respiratory system.</i>								
Asthma		1	1					3
Bronchitis acuta.....	1	20	19	2				115
Bronchitis chronica.....		3	1	2	2			160
Catarrhus bronchialis.....		3	38	40	1			283
Catarrhus nasalis.....			5	5				21
Hæmoptysis.....		1	1	1				3
Laryngitis.....		2	2					5
Phthisis pneumonica chronica.....		1		1				11
Pleuritis.....		4	3	1				48
Pneumonia.....		1					1	8
<i>Diseases of the digestive system.</i>								
Cholera morbus.....		5	5					18
Colica.....		10	9	1				27
Constipatio.....		5	4				1	17
Diarrhœa acuta.....	1	25	26					85
Dysenteria acuta.....		2	2					4
Dyspepsia.....	1	4	4	1				92
Enteritis.....	1	2	2	1				6
Fistula ani.....		3	2	1				9
Gastritis.....		3	3					15
Hæmorrhoids.....		9	8				1	66
Hernia.....		4	1	3				3
Pharyngitis.....		12	12					52
Tonsillitis.....		11	11					50
<i>Diseases of the genito-urinary system.</i>								
Albuminuria.....		1	1					11
Calculus.....		2	2					11
Chancroides.....		4	3				1	107
Cystitis.....		7	7					65
Gonorrhœa.....		20	16	2			2	202
Orchitis.....		14	12	2				122
Paraphimosis.....		5	5					71
Prostatitis.....	1	1	2					16
Urethra: strictura.....		1		1				
Varicocele.....		1		1				1
<i>Diseases of the locomotive system.</i>								
Arthritis.....		2	2					13
Ankylosis.....		1	1					2
Necrosis.....		1		1				11
<i>Diseases of the integumentary system.</i>								
Abscessus.....	1	19	20					144
Acne.....		1	1					26
Furunculul.....		18	18					76
Paronychia.....		3	3					45
Ulcus.....		5	5					38
<i>Diseases of the absorbent system.</i>								
Adenitis		28	22	4			2	718
POISONS.								
Alcoholismus acutus		14	13	1				41

DETAILED STATEMENT—Continued.

Diseases.	Remaining from last quarter.	Admitted.	Discharged to duty.	Invalided.		Died.	Continued to next quarter.	Total number of sick days.
				To hospital.	From service.			
VIOLENT DISEASES AND DEATHS.								
Abrasio		4	4					16
Ambustio		2	2					10
Concussio cerebri		2	1				1	55
Contusio	1	35	35	1				204
Fractura		3	1	2				57
Luxatio		2	2					11
Stemma	1	30	31					156
Vulnus contusum		19	19					166
Vulnus incisum		4	3				1	24
Vulnus laceratum		10	10					118
Vulnus punctum		10	10					43
Total ;	27	659	608	66	.....	1	11	5,478

BROOKLYN.

[Second rate; wood; screw; 1,600 tons; strength, 317; service, 365 days.]

Classification of diseases.	Remaining from last year.	Admitted.	Discharged to duty.	Invalided.		Died.	Remaining at the end of the year.	Total number of sick days.
				To hospital.	From service.			
Zymotic diseases		34	31	2			1	142
Constitutional diseases	1	26	26	1				220
Diseases of the nervous system	1	12	12	1				133
Diseases of the eye		7	6				1	65
Diseases of the ear		1	1					2
Diseases of the circulatory system		1	1					1
Diseases of the respiratory system		31	31				2	205
Diseases of the digestive system	2	46	45	1				218
Diseases of the genito urinary system		28	25				3	361
Diseases of the locomotive system		3	3					15
Diseases of the integumentary system		27	27					189
Diseases of the absorbent system		15	13				2	511
Poisons		6	6					21
Violent diseases and deaths	1	65	65				1	456
Total	5	302	292	5			10	2,544

NOTE.—This vessel cruised in the South Atlantic and upon the east coast of Africa, and was in port 286 days and at sea 79 days. The average number of days each case was under treatment was 8.28, and the daily average number of sick was 6.97.

AGE TABLE.

	15 to 25.	25 to 35.	35 to 45.	45 to 55.	Over 55.
Average number on board	150				
Number sick					

DETAILED STATEMENT.

Diseases.	Remaining from last quarter.	Admitted.	Discharged to duty.	Invalided.		Died.	Continued to next quarter.	Total number of sick-days.
				To hospital.	From service.			
GENERAL DISEASES.								
<i>Zymotic diseases.</i>								
Febricula		9	9					27
Febris continua simplex		3	3					19
Febris intermittens		17	16				1	69
Febris remittens		1	1					1
Parotitis		2	2					20
Varicella		1		1				1
Variola		1		1				5
<i>Constitutional diseases.</i>								
Anæmia		1		1				32
Rheumatismus acutus	1	19	20					148
Rheumatismus chronicus		4	4					25
Syphilis consecutiva		2	2					15
LOCAL DISEASES.								
<i>Diseases of the nervous system.</i>								
Cephalalgia		3	3					9
Epilepsia		3	2	1				100
Insolatio		1	1					4
Neuralgia	1	3	4					17
Sciatica		1	1					5
Vertigo		1	1					3
<i>Diseases of the eye.</i>								
Hordeolum		3	3					7
Iritis		3	2				1	46
Retinitis		1	1					12
<i>Diseases of the ear.</i>								
Otitis		1	1					2
<i>Diseases of the circulatory system.</i>								
Syncope		1	1					1
<i>Diseases of the respiratory system.</i>								
Bronchitis acuta		4	4					54
Catarrhus bronchialis		21	21					127
Catarrhus nasalis		5	5					21
Hæmoptysis		1	1					3
<i>Diseases of the digestive system.</i>								
Cholera morbus		4	4					16
Colica		4	4					15
Constipatio		3	2				1	15
Diarrhoea acuta	1	6	7					21
Dyspepsia		3	3					38
Enteritis	1	2	2	1				6
Fistula ani		2	2					7
Gastritis		2	2					5
Hæmorrhoids		4	3				1	24
Pharyngitis		12	12					52
Tonsillitis		4	4					19
<i>Diseases of the genito-urinary system.</i>								
Gonorrhoea		2	2					11
Prostatitis		3	2				1	98
Urethritis		4	4					44
Urethral calculus		8	6				2	76
Urethral stricture		6	6					61
Urethral fistula		5	5					71

DETAILED STATEMENT—Continued.

Diseases.	Remaining from last quarter.	Admitted.	Discharged to duty.	Invalided.		Died.	Continued to next quarter.	Total number of sick-days.
				To hospital.	From service.			
LOCAL DISEASES—Continued.								
<i>Diseases of the locomotive system.</i>								
Arthritis		2	2					13
Ankylosis		1	1					2
<i>Diseases of the integumentary system.</i>								
A baccessus		13	13					78
Acne		1	1					26
Furunculus		9	9					48
Paronychia		2	2					29
Ulcus		2	2					8
<i>Diseases of the absorbent system.</i>								
Adenitis		15	13				2	511
POISONS.								
Alcoholismus acutus		6	6					21
VIOLENT DISEASES AND DEATHS.								
Abrasio		1	1					6
Ambustio		2	2					10
Concussio cerebri		1	1					52
Contusio	1	19	20					112
Fractura		1	1					8
Luxatio		2	2					11
Stremma		18	18					115
Vulnus contusum		10	10					97
Vulnus incisum		2	1				1	7
Vulnus laceratum		4	4					21
Vulnus punctum		5	5					22
Total	5	302	292	5			10	2,544

GALENA.

[Third rate; wood; screw; 910 tons; service, 365 days; strength, 181.]

Classification of diseases.	Remaining from last year.	Admitted.	Discharged to duty.	Invalided.		Died.	Remaining at the end of the year.	Total number of sick-days.
				To hospital.	From service.			
Zymotic diseases		22	21	1				98
Constitutional diseases		18	16	2				175
Diseases of the nervous system		6	5	1				73
Diseases of the circulatory system		1		1				36
Diseases of the respiratory system		8	7	1				28
Diseases of the digestive system		16	15	1				76
Diseases of the genito-urinary system	1	2	3					28
Diseases of the integumentary system	1	7	8					56
Diseases of the absorbent system		8	7	1				143
Poisons		4	3	1				11
Violent diseases and deaths		23	21	2				196
Total	2	115	106	11				918

NOTE.—This vessel was attached to the South Atlantic squad—was 310 days in port and 55 at sea. The average number of day-7.84, and the daily average number of sick was 2.51.

REPORT OF VACCINATION.

	Successful.	Unsuccessful.
No evidence of previous examination.....	1	.....
Presenting good cicatrices	4	3

NOTE.—Animal virus used.

AGE TABLE.

	15 to 25.	25 to 35.	35 to 45.	45 to 55.	Over 55.
Average number on board	80	72	22	7	.....
Number sick	43	53	18	3	.....

DETAILED STATEMENT.

Diseases.	Remaining from last quarter.	Admitted.	Discharged to duty.	Invalided.		Died.	Continued to next quarter.	Total number of sick-days.
				To hospital.	From service.			
GENERAL DISEASES.								
<i>Zymotic diseases.</i>								
Febris continua simplex.....		17	16	1	.....	.....	.....	72
Febris intermittens.....		2	2	.....	.....	.....	.....	9
Febris remittens.....		1	1	.....	.....	.....	.....	6
Vaccina		2	2	.....	.....	.....	.....	9
<i>Constitutional diseases.</i>								
Adynamia		2	1	1	.....	.....	.....	84
Rheumatismus acutus.....		12	12	.....	.....	.....	.....	69
Rheumatismus chronicus.....		1	1	.....	.....	.....	.....	7
Syphilis consecutiva		3	2	1	.....	.....	.....	15
LOCAL DISEASES.								
<i>Diseases of the nervous system.</i>								
Cephalalgia.....		3	3	.....	.....	.....	.....	6
Epilepsia		2	1	1	.....	.....	.....	66
Neuralgia.....		1	1	1	.....	.....	.....	1
<i>Diseases of the circulatory system.</i>								
Morbi valvularum cordis		1	.....	1	.....	.....	.....	36
<i>Diseases of the respiratory system.</i>								
Bronchitis acuta .....		.....	1	1	.....	.....	.....	3
Bronchitis chronica.....		5	4	.....	.....	.....	.....	20
Laryngitis		2	2	.....	.....	.....	.....	5
<i>Diseases of the digestive system.</i>								
Colica		4	4	.....	.....	.....	.....	9
Diarrhoea acuta.....		7	7	.....	.....	.....	.....	29
Fistula ani		1	.....	1	.....	.....	.....	3
Gastritis		1	1	.....	.....	.....	.....	10
Hæmorrhoids.....		3	3	.....	.....	.....	.....	26
<i>Diseases of the genito-urinary system.</i>								
Orchitis .....		.....	1	.....	.....	.....	.....	12
Prostatitis	1	.....	2	.....	.....	.....	.....	16

DETAILED STATEMENT—Continued.

Diseases.	Remaining from last quarter.	Admitted.	Discharged to duty.	Invalided.		Died.	Continued to next quarter.	Total number of sick-days.
				To hospital.	From service.			
LOCAL DISEASES—Continued.								
<i>Diseases of the integumentary system.</i>								
Abcessus.....	1	33	3					26
Furunculus.....		33	3					8
Ulcus.....		33	2					22
<i>Diseases of the absorbent system.</i>								
Adenitis.....		8	7	4				143
POISONS.								
Alcoholismus acutus		4	3	1				11
VIOLENT DISEASES AND DEATHS.								
Abrasio.....		1	1					2
Contusio.....		12	12					79
Fractura.....		33	3	2				54
Stremma.....		33	5					14
Vulnus laceratum		3	3					47
Total.....	2	115	106	11				918

NIPSIC.

[Third rate; wood; screw; 615 tons; service, 365 days; strength, 175.]

Classification of diseases.	Remaining from last year.	Admitted.	Discharged to duty.	Invalided.		Died.	Remaining at the end of the year.	Total number of sick-days.
				To hospital.	From service.			
Zymotic diseases.....	1	33	28	6				182
Constitutional diseases.....	6	34	25	15				423
Diseases of the nervous system.....	2	16	15	3				99
Diseases of the eye.....		6	6					22
Diseases of the ear.....		1	1					3
Diseases of the teeth.....		1	1					5
Diseases of the circulatory system.....	2	2		4				118
Diseases of the respiratory system.....	7	35	35	6			1	424
Diseases of the digestive system.....	1	33	29	5				150
Diseases of the genito-urinary system.....		26	20	6				217
Diseases of the locomotive system.....		1		1				11
Diseases of the integumentary system.....		12	12					81
Diseases of the absorbent system.....		5	2	3				64
Poisons.....		4	4					9
Violent diseases and deaths.....	1	33	32	1		1		208
Total.....	20	242	210	50		1	1	2,016

NOTE.—This vessel was 322 days in port, 63 days at sea. The average number of days each case was under treatment, 7.6, and the daily average number of sick was 5.5. The death was from concussion cerebri.

REPORT OF VACCINATION.

	Successful.	Unsuccessful.
No evidence of previous examination	4	16
Presenting good cicatrices	3	6
Evidence of former attack of small-pox	0	1

NOTE.—Bovine virus used.

AGE TABLE.

	15 to 25.	25 to 35.	35 to 45.	45 to 55.	Over 55.
Average number on board	75	74	21	4	1
Number sick	106	108	39	5	4

DETAILED STATEMENT.

Diseases,	Remaining from last quarter.	Admitted.	Discharged to duty.	Invalided.		Died.	Continued to next quarter.	Total number of sick-days.
				To hospital.	From service.			
GENERAL DISEASES.								
Zymotic diseases.								
Febris intermittens.....	1	28	25	4				153
Febris remittens.....		2	1	1				9
Scarlatina.....		1		1				3
Vaccina.....		2	2					17
Constitutional diseases.								
Adynamia.....		3	3					8
Lumbago.....	2	3	3					17
Rheumatismus acutus.....		2		2				16
Rheumatismus chronicus.....	2	19	15	6				242
Senectus.....		1		1				1
Syphilis consecutiva.....	2	5	4	3				138
Syphilis primitiva.....		1		1				1
LOCAL DISEASES.								
Diseases of the nervous system.								
Cephalalgia.....		1	1					2
Dementia.....		1		1				1
Insomnia.....		1	1					3
Nausea marina.....		2	2					4
Neuralgia.....	2	10	11	1				84
Paralysis.....		1		1				5
Diseases of the eye.								
Conjunctivitis.....		4	4					18
Hordeolum.....		2	2					4
Diseases of the ear.								
Otalgia.....		1	1					3
Diseases of the teeth.								
Odontalgia.....		1	1					5
Diseases of the circulatory system.								
Morbi valvularum cordis.....		1		1				1
Palpitatio.....	2	1		3				117

DETAILED STATEMENT—Continued.

Diseases.	Remaining from last quarter.	Admitted.	Discharged to duty.	Invalided.		Died.	Continued to next quarter.	Total number of sick-days.
				To hospital.	From service.			
LOCAL DISEASES—Continued.								
<i>Diseases of the respiratory system.</i>								
Bronchitis acuta.....	1	11	11	1	.....	.....	.....	41
Bronchitis chronica.....	3	1	2	2	.....	.....	.....	160
Catarrhus bronchialis.....	3	17	19	1	.....	.....	.....	156
Phthisis pneumonica chronica.....	1	.....	1	.....	.....	.....	11
Pleuritis.....	4	3	1	.....	.....	.....	48
Pneumonia.....	1	.....	.....	.....	.....	1	8
<i>Diseases of the digestive system.</i>								
Cholera morbus.....	1	1	.....	.....	.....	.....	2
Colica.....	2	1	1	.....	.....	.....	3
Constipatio.....	2	2	.....	.....	.....	.....	2
Diarrhoea acuta.....	12	12	.....	.....	.....	.....	35
Dysenteria acuta.....	2	2	.....	.....	.....	.....	4
Dyspepsia.....	1	1	1	1	.....	.....	.....	54
Hæmorrhoids.....	2	2	.....	.....	.....	.....	16
Hernia.....	4	1	3	.....	.....	.....	3
Tonsillitis.....	7	7	.....	.....	.....	.....	31
<i>Diseases of the genito-urinary system.</i>								
Albuminuria.....	1	1	.....	.....	.....	.....	11
Chancroides.....	1	1	.....	.....	.....	.....	9
Cystitis.....	3	3	.....	.....	.....	.....	21
Gonorrhoea.....	12	10	2	.....	.....	.....	126
Orchitis.....	7	5	2	.....	.....	.....	49
Urethrae strictura.....	1	.....	1	.....	.....	.....	.....
Varicocele.....	1	.....	1	.....	.....	.....	1
<i>Diseases of the locomotive system.</i>								
Necrosis.....	1	.....	1	.....	.....	.....	11
<i>Diseases of the integumentary system.</i>								
Abscessus.....	4	4	.....	.....	.....	.....	37
Furunculus.....	6	6	.....	.....	.....	.....	20
Paronychia.....	1	1	.....	.....	.....	.....	16
Ulcus.....	1	1	.....	.....	.....	.....	8
<i>Diseases of the absorbent system.</i>								
Adenitis.....	5	2	3	.....	.....	.....	64
POISONS.								
Alcoholismus acutus.....	4	4	.....	.....	.....	.....	9
VIOLENT DISEASES AND DEATHS.								
Abrasio.....	2	2	.....	.....	.....	.....	8
Concussio cerebri.....	1	.....	.....	.....	1	.....	3
Contusio.....	4	3	1	.....	.....	.....	13
Stemma.....	1	7	8	.....	.....	.....	.....	27
Vulnus contusum.....	9	9	.....	.....	.....	.....	69
Vulnus incisum.....	2	2	.....	.....	.....	.....	117
Vulnus laceratum.....	3	3	.....	.....	.....	.....	50
Vulnus punctum.....	5	5	.....	.....	.....	.....	21
Total.....	20	242	210	50	.....	1	1	2,016

SANITARY CONDITION
OF THE
PACIFIC STATION.





THE PACIFIC SQUADRON.

The vessels employed upon this station were the Hartford (flag-ship), Pensacola, Lackawanna, Iroquois, Alaska, Adams, Alert, Wachusett, Ranger, Independence, Onward, Hassler, and McArthur.

The total force employed was 2,184.

The loss of strength of the total force was: From invaliding 159, or at the rate of 72+ per 1,000; from deaths 13, or at the rate of 5.9+ per 1,000.

The loss of effective force represented by the number of cases treated was 1,703 with 15,367 sick-days, giving an average of 9+ days for each case with a daily average number of sick of 42.1.

The admissions for treatment per 1,000 of the mean strength was at the rate of 779+, and the following table presents the ratio per 1,000 of each class of diseases:

Total force	2,184
Admissions per 1,000	779+
<hr/>	
Zymotic diseases	82+
Constitutional diseases	117+
Diseases of the nervous system	63
Diseases of the eye	10
Diseases of the ear	4
Diseases of the teeth	5
Diseases of the circulatory system	7
Diseases of the respiratory system	87
Diseases of the digestive system	94
Diseases of the genito-urinary system	49
Diseases of the locomotive system	4
Diseases of the integumentary system	66
Diseases of the absorbent system	16
Non-malignant tumors and cysts	
Poisons	17
Violent diseases and deaths	147
Feigned diseases	1

RECAPITULATION FOR 1898.

Summary.

Classification of Diseases.	Remaining from last year.	Admitted.	Discharged to duty.	Invalids.	Discharged at the end of the year.	Total number of sick-days.
			In hospital.	From service.	Died.	
Zymotic diseases.....	114	12	12	1	7	147
Constitutional diseases.....	11	12	12	1	1	147
Diseases of the nervous system.....	11	12	12	1	1	147
Diseases of the eye.....	11	12	12	1	1	147
Diseases of the ear.....	11	12	12	1	1	147
Diseases of the teeth.....	11	12	12	1	1	147
Diseases of the circulatory system.....	11	12	12	1	1	147
Diseases of the respiratory system.....	11	12	12	1	1	147
Diseases of the digestive system.....	11	12	12	1	1	147
Diseases of the genito-urinary system.....	11	12	12	1	1	147
Diseases of the locomotive system.....	11	12	12	1	1	147
Diseases of the integumentary system.....	11	12	12	1	1	147
Diseases of the absorbent system.....	11	12	12	1	1	147
Polio.....	11	12	12	1	1	147
Violent diseases and deaths.....	11	12	12	1	1	147
Feligned diseases.....	11	12	12	1	1	147
Total.....	87	1,000	1,400	147	13	15,300

REPORT OF VACCINATION.

	Successful.	Unsuccessful.
No evidence of previous vaccination.....	50	10
Presenting good clothing.....	50	10
Evidence of former attack of small-pox.....	9	10

AGE TABLE.

	18 to 20.	20 to 30.	35 to 45.	45 to 55.	Over 55.
Average number on board.....	507	539	310	96	10
Number sick.....	248	641	296	80	10

DETAILED STATEMENT.

Diseases.	Remaining from last quarter.	Admitted.	Discharged to duty.	Invalids.		Continued to next quarter.	Total number of sick- days.
				To hospital.	From service.		
GENERAL DISEASES.							
Zymotic diseases.							
Febricula.....		34	34				140
Febris cerebro spinalis.....		1	1				6
Febris continua simplex.....		0	0				48
Febris enterica.....	1	3	2	1			82
Febris flava.....		7	8			4	87
Febris intermittens.....	1	102	101	1		1	453
Febris recidiva.....		1	1				8

DETAILED STATEMENT—Continued.

Diseases.	Remaining from last quarter.	Admitted.	Discharged to duty.	Invalided.		Died.	Continued to next quarter.	Total number of sick-days.
				To hospital.	From service.			
GENERAL DISEASES—Continued.								
Zymotic diseases—Continued.								
Febris remittens.....	1	32	26	4		2	1	316
Parotitis.....		1	1					6
Vaccina.....		7	7					69
Varioloides.....		1		1				1
Constitutional diseases.								
Adynamia.....	1	25	19	7				373
Anæmia.....		2	2					4
Diabetes.....	1	3	1	3				50
Hypotrophia.....		1		1				11
Lumbago.....		17	17					55
Podagra.....		7	7	1				43
Rheumatismus acutus.....	2	49	47	1			3	463
Rheumatismus chronicus.....	1	33	28	5		1	1	449
Syphilis consecutiva.....	4	72	61	10	4		1	1,043
Syphilis primitiva.....	3	31	30	2			2	667
Torticollis.....		3	3					11
Tuberculosis.....		1		1				4
LOCAL DISEASES.								
Diseases of the nervous system.								
Apoplexia.....		1				1		1
Cephalalgia.....		16				15		66
Dementia.....		5		4				39
Epilepsia.....		11	6	2	3			90
Insolatio.....		2	2			3		13
Insomnia.....		3	2	1				23
Irritatio spinalia.....		1	1					1
Melancholia.....		2	1	1				18
Meningitis.....		1		1				21
Nausea marina.....		14	12	2				76
Neuralgia.....	1	59	54	5			1	603
Paralysis.....		5	1	4				52
Pleurodynia.....	1	9	10					85
Vertigo.....	2	4	5	1				67
Myalgia.....	2	1	1					9
Neurasthenia.....		1	1					8
Diseases of the eye.								
Amaurosis.....		2	1		1			20
Asthenopia.....		1		1				9
Conjunctivitis.....	1	11	9	2	1			107
Hordeolum.....		2	2					8
Iritis.....		1		1				18
Ophthalmia gonorrhœica.....		1		1				1
Retinitis.....	1	1	1	1				96
Dacrocystitis chronica.....		1		1				2
Myopia.....		1		1				10
Sclerotic hæmorrhage.....		1	1					5
Diseases of the ear.								
Otalgia.....		1	1					4
Otitis.....		3	3					20
Otorrhœa.....		1	1					4
Surditas.....		4	2	1	1			11
Diseases of the teeth.								
Odontalgia.....		7	7					27
Parulis.....		4	4					6
Diseases of the circulatory system.								
Hydrops pericardii.....		1	1					1
Hypertrophia cordis.....		2	1	1				109
Morbi valvularum cordis.....		2	1	1				21
Palpitatio.....		10	10					106
Pericarditis.....		1		1				115
Varix.....		1		1				

100 REPORT OF THE SURGEON-GENERAL OF THE NAVY.

DETAILED STATEMENT—Continued.

Diseases.	Remaining from last quarter.	Admitted.	Discharged to duty.	Invalided.		Died.	Continued to next days.	Total number of sick-days.
				To hospital.	From service.			
LOCAL DISEASES—Continued.								
<i>Diseases of the respiratory system.</i>								
Asthma	1	7	5	3				165
Bronchitis acuta	1	71	65	7				529
Bronchitis chronica		23	14	9				467
Catarrhus bronchialis		42	42					226
Catarrhus nasalis		9	9					23
Emphysema		1		1				25
Hæmoptysis		3	3					32
Laryngitis		7	5	2				20
Phthisis pneumonica acuta		1		1				14
Phthisis pneumonica chronica	1	10	7	3	1			186
Pleuritis		8	6	2				55
Pneumonia		6	3	2			1	211
<i>Diseases of the digestive system.</i>								
Cholera morbus		6	6					14
Colica		25	25					108
Congestio hepatis		4	3				1	49
Constipatio		2	1	1				5
Diarrhœa acuta		42	41				1	182
Dysenteria acuta		14	12				1	90
Dysenteria chronica		1		1				6
Dyspepsia		12	11	1				64
Gastritis		1	1					4
Gastrodynia		2	2					4
Hæmorrhoids		13	10	2			1	134
Hepatitis chronica		1		1				30
Hernia		14	7	6			1	148
Icterus		2	2					25
Pharyngitis		9	7	2				17
Proctitis		1	1					2
Prolapsus ani		1		1				22
Tonsillitis		52	46	5			1	243
Vernex		4	4					13
Typhlitis		1	1					3
<i>Diseases of the genito-urinary system.</i>								
Albuminuria		5	1	4				102
Balanitis		1	1					2
Calculus renalis		1	1					7
Chaneroides		11	9	1			1	161
Cystitis		9	8	1				77
Enuresis		1	3					3
Gonorrhœa	1	29	29				1	468
Hydrocele		2	2					15
Nephritis		2	1	1				50
Orchitis	2	24	24	1			1	313
Paraphimosis		1	1					7
Prostatitis		1		1				1
Urethra strictura		17	11	6				206
<i>Diseases of the locomotive system.</i>								
Arthritis		1	1					7
Hydrops articolorum		2	2					16
Synovitis		6	4				2	114
<i>Diseases of the integumentary system.</i>								
Abscessus	1	34	35					283
Anthrax		1	1					20
Ecthyma		1	1					8
Eczema		2	2					15
Furunculosis		70	68				2	437
Erysipelas		3	3					29
Paronychia		13	11				2	130
Pemphigus	1		1					3
Scabies		1	1					3
Ulcus		14	13				1	180
Unguis involutus		2	2					27
Urticaria		1	1					5
Chigoe		1	1					6
Dermatitis		1	1					2

REPORT OF THE SURGEON-GENERAL OF THE NAVY. 101

DETAILED STATEMENT—Continued.

Diseases.	Remaining from last quarter.	Admitted.	Discharged to duty.	Invalided.		Died.	Continued to next quarter.	Total number of sick- days.
				To hospital.	From service.			
LOCAL DISEASES—Continued.								
<i>Diseases of the absorbent system.</i>								
Adenitis		34	28	4	1		1	584
Lymphangitis		1	1					14
POISONS.								
Alcoholismus acutus								
Vulnus venenatum	1	30	31					100
		7	6	1				67
VIOLENT DISEASES AND DEATHS.								
Abrasio		24	23				1	143
Ambustio		10	10					60
Concussio cerebri		4	4					99
Contusio	1	64	65				1	373
Explosio		2	1				2	2
Fractura	2	9	6	2			3	375
Luxatio		4	4					84
Stremma	2	83	82	2			1	638
Submersio		1				1		1
Vulnus contusum	1	38	38	1				300
Vulnus incisum		32	31				1	236
Vulnus laceratum		17	17					135
Vulnus punctum		13	12				1	76
Vulnus scopetarium		1				1		1
Contusio spinalis		1				1		1
FEIGNED DISEASES.								
Lumbago		2	2					9
Vertigo		1	1					1
Total	37	1,066	1,495	147	12	13	36	15,367

HARTFORD.

[Second rate; wood; screw; 1,800 tons; service, 365 days; strength, 348.]

Classification of diseases.	Remaining from last year.	Admitted.	Discharged to duty.	Invalided.		Died.	Remaining at the end of the year.	Total number of sick-days.
				To hospital.	From service.			
Zymotic diseases		75	69	1		3	2	463
Constitutional diseases	3	17	14	6		1		565
Diseases of the nervous system	12	40	35	5			1	524
Diseases of the eye		1	1					5
Diseases of the ear		2	2					5
Diseases of the teeth		1	1					7
Diseases of the circulatory system		4	2					229
Diseases of the respiratory system	1	18	17					428
Diseases of the digestive system		38	34	4				355
Diseases of the genito-urinary system	3	25	24	4				396
Diseases of the locomotive system		1	1					7
Diseases of the integumentary system		37	35				2	302
Diseases of the absorbent system		3	2		1			40
Poisons		6	6					13
Violent diseases and deaths	2	64	63	2			1	658
Total	11	332	306	26	1	4	6	3,937

NOTE.—This vessel was the flag-ship of the Pacific squadron and was 193 days in port and 172 days at sea. The average number of days each case was under treatment was 16.2, and the daily average number of sick was 10.78. The deaths were, 1 from apoplexy, 1 from yellow fever, and 2 from malignant (pernicious) remittent fever.

102 REPORT OF THE SURGEON-GENERAL OF THE NAVY.

AGE TABLE.

	15 to 25.	25 to 35.	35 to 45.	45 to 55.	Over 55.
Average number on board.....	167	125	43	11	2
Number sick.....	107	123	79	29	5

DETAILED STATEMENT.

Diseases.	Remaining from last quarter.	Admitted.	Discharged to duty.	Invalided.		Died.	Continued to next quarter.	Total number of sick-days.
				To hospital.	From service.			
GENERAL DISEASES.								
Zymotic diseases.								
Febris enterica.....		1		1				5
Febris flava.....		1				1		2
Febris intermittens.....		65	64				1	287
Febris remittens.....		8	5			2	1	109
Constitutional diseases.								
Adynamia.....		6	3	3				217
Diabetes.....		1		1				25
Lumbago.....		1	1					2
Rheumatismus acutus.....	2	3	5					45
Rheumatismus chronicus.....		3	1	2				205
Syphilis consecutiva.....		1	1					3
Syphilis primitiva.....	1	1	2					64
Torticollis.....		1	1					4
LOCAL DISEASES.								
Diseases of the nervous system.								
Apoplexia.....		1				1		1
Cephalalgia.....		2	2					20
Dementia.....		3		3				35
Insolatio.....		2	2					13
Insomnia.....		1	1					1
Neuralgia.....	1	26	24	2			1	377
Neurasthenia.....		1	1					8
Paralysis.....		1	1					7
Pleurodynia.....		2	2					10
Vertigo.....	1	1	2					52
Diseases of the eye.								
Hæmorrhage under scleral conjunctiva.....		1	1					5
Diseases of the ear.								
Otitis.....		1	1					1
Otorrhœa.....		1	1					4
Diseases of the teeth.								
Odontalgia.....		1	1					7
Diseases of the circulatory system.								
Hypertrophica cordis.....		1		1				84
Palpitatio.....		2	2					30
Pericarditis.....		1		1				115
Diseases of the respiratory system.								
Asthma.....		1						
Bronchitis acuta.....		5						
Bronchitis chronica.....		4						
Catarrhus bronchialis.....								
Hæmoptysis.....								
Phthisis pneumonica chronica.....		1						
Pleuritis.....								

DETAILED STATEMENT—Continued.

Diseases.	Remaining from last quarter.	Admitted.	Discharged to duty.	Invalided.		Died.	Continued to next quarter.	Total number of sick-days.
				To hospital.	From service.			
LOCAL DISEASES—Continued.								
<i>Diseases of the digestive system.</i>								
Cholera morbus.....		1	1					2
Colica.....		4	4					45
Diarrhœa acuta.....		8	8					48
Dysenteria acuta.....		1	1					4
Hæmorrhoids.....		5	4	1				103
Hepatitis chronica.....		1		1				30
Hernia.....		6	4	2				51
Tonsillitis.....		11	11					70
Vermes.....		1	1					2
<i>Diseases of the genito-urinary system.</i>								
Albuminuria.....		1		1				27
Chaneroides.....		5	5					69
Enuresis.....	1		1				1	1
Gonorrhœa.....	1	9	10					124
Orchitis.....	1	2	3					105
Urethræ strictura.....		8	5	3				70
<i>Diseases of the locomotive system.</i>								
Hydrops articulorum.....		1	1					7
<i>Diseases of the integumentary system.</i>								
Abscessus.....		4	4					58
Ecthyma.....		1	1					8
Furunculæ.....		25	24				1	163
Paronychia.....		1	1					3
Ulcus.....		6	5				1	70
<i>Diseases of the absorbent system.</i>								
Adenitis.....		2	1		1			26
Lymphangitis.....		1	1					14
POISONS.								
Alcoholismus acutus.....		6	6					13
VIOLENT DISEASES AND DEATHS.								
Abrasio.....		6	6					34
Ambustio.....		3	3					13
Concussio cerebri.....		1	1					3
Contusio.....		7	7					52
Fractura.....	1	1		1			1	160
Strenua.....	1	20	21					172
Vulnus contusum.....		12	11	1				104
Vulnus incisum.....		7	7					44
Vulnus laceratum.....		6	6					73
Vulnus punctum.....		1	1					3
Total.....	11	332	306	26	1	4	6	3,037

Passed Assistant Surgeon W. S. Dixon, U. S. N., in the report for the third quarter, 1883, remarks:

The cases of disease attributable to local causes were undoubtedly due in large part to the wet condition of the berth deck. During the first ten days of August about seventy-five of the crew were treated for inflamed throat. Whilst the tonsils in the majority of the cases bore the brunt of the attack, in many the inflammatory action extended to the larynx and into the bronchia. In some of the cases the tongue was fissured, and deglutition difficult and painful. Where the bronchia were affected, the symptoms were catarrhal, with slight elevation of temperature. The cases readily to local treatment, i. e., the application of liq. ferr. subsulphat, and in the more severe cases mild expectorants. In but few of the cases did it become necessary to remove them from duty.

In the report for the fourth quarter, Passed Assistant Surgeon Dixon remarks:

Only eight cases of malarial fever occurred on board from the beginning of the year to September 24, 1883. The Hartford arrived at Panama September 24, and during a stay of three days two cases occurred, both in persons who had *not* been exposed on shore. The anchorage was 3 miles from the mainland and half a mile from Deadman's Island. No water from shore was used on board. The weather was hot, humid, and consequently depressing. Whilst at sea during the ensuing four days, en route to Punta Arenas, Costa Rica, five cases occurred. Of these five, two only had been ashore at Panama.

At Punta Arenas and at Corinto liberty was granted, and from that time the number of cases rapidly increased.

One case (febris remitt. pern.) contracted at Corinto, Nicaragua, terminated fatally. The phenomena presented in this case were a febrile movement, erratic in its course, with delirium at night, emesis, at one time black in character, retention and suppression of an albuminous urine, intense yellowness of the skin, as well as of the cutaneous and renal secretions, hemorrhage from the gums, multiple abscesses, and the alvine dejecta were tarry and offensive. Believing that the case was of specific character, isolation was carried out as far as practicable, disinfectants were used, and the soiled clothing destroyed.

PENSACOLA.

[Second rate; wood; screw; 2,000 tons; service, 365 days; strength, 309.]

Classification of diseases.	Remaining from last year.	Admitted.	Discharged to duty.	Invalided.		Died.	Remaining at the end of the year.	Total number of sick-days.
				To hospital.	From service.			
Zymotic diseases		10	9	1				53
Constitutional diseases	3	60	59	1	3			841
Diseases of the nervous system	1	23	20	3	1			125
Diseases of the eye	1	2	1	3				26
Diseases of the ear		1	1					2
Diseases of the teeth		2	2					3
Diseases of the circulatory system		1	1					25
Diseases of the respiratory system		17	14	2			1	289
Diseases of the digestive system		36	34	1			1	156
Diseases of the genito-urinary system		14	14					189
Diseases of the locomotive system		1					1	74
Diseases of the integumentary system		15	15					90
Diseases of the absorbent system		2	2					45
Poisons		4	4					17
Violent diseases and deaths	1	41	39			1	2	447
Total	6	229	215	10	4	1	6	2,381

NOTE.—This vessel was 217 days in port and 148 days at sea. The average number of days each case was under treatment was 10.1, and the daily average number of sick was 6.5. The death was from concussio spinalis.

REPORT OF VACCINATION.

	Successful.	Unsuccessful.
No evidence of previous examination	1	
Presenting good cicatrices	8	10
Evidence of former attack of small pox		

NOTE.—Human virus.

AGE TABLE.

	15 to 25.	25 to 35.	35 to 45.	45 to 55.	Over 55.
Average number on board					4
Number sick					

DETAILED STATEMENT.

Diseases.	Remaining from last quarter.	Admitted.	Discharged to duty.	Invalided.		Died.	Continued to next quarter.	Total number of sick-days.
				To hospital.	From service.			
GENERAL DISEASES.								
Zymotic diseases.								
Febricula		4	4					18
Febris intermittens		3	3					21
Febris remittens		1	1					8
Vaccina		1	1					4
Varioloides		1		1				1
Constitutional diseases.								
Adynamia		1	1					12
Lumbago		4	4					20
Rheumatismus acutus		1	1					1
Rheumatismus chronicus		9	9					69
Syphilis consecutiva	3	34	33	1	3			497
Syphilis primitiva		11	11					242
LOCAL DISEASES.								
Diseases of the nervous system.								
Cephalalgia		5	5					9
Epilepsia		3	2		1			9
Melancholia		1	1					4
Nausea marina		1	1					1
Neuralgia		8	8					59
Paralysis		2		2				11
Pleurodynia		3	3					27
Vertigo	1			1				5
Diseases of the eye.								
Conjunctivitis		1	1					3
Iritis		1		1				18
Retinitis	1			1				5
Diseases of the ear.								
Surditas		1	1					2
Diseases of the teeth.								
Parulis		2	2					3
Diseases of the circulatory system.								
Hypertrophia cordis	1	1						25
Diseases of the respiratory system.								
Bronchitis acuta		2	2					19
Bronchitis chronica		9	3					72
Catarrhus bronchialis		3	3					25
Catarrhus nasalis		2	2					6
Hæmoptysis		1	1					14
Laryngitis		1	1					2
Phthisis pneumonica chronica		3	2	1				72
Pneumonia		2		1			1	79
Diseases of the digestive system.								
Cholera morbus		2	2					8
Colica		2	2					2
Enteritis acuta		15	15					30
Enteritis acuta		1	1					53
Enteritis chronica		1		1				6
Gastritis		3	3					26
Hæmorrhoids		1	1					4
Intestinal		2	2					4
Ischuria		2	1				1	11
Proctitis		3	3					4
Stomatitis		1	1					2
Typhilitis		1	1					2
Ulcera		2	2					4

DETAILED STATEMENT—Continued.

Diseases.	Remaining from last quarter.	Admitted.	Discharged to duty.	Invalided.		Died.	Continued to next quarter.	Total number of sick-days.
				To hospital.	From service.			
LOCAL DISEASES—Continued.								
<i>Diseases of the genito-urinary system.</i>								
Chancroides		1	1					12
Cystitis		5	5					42
Gonorrhœa		4	4					47
Orethritis		1	1					13
Paraphimosis		1	1					7
Urethra strictura		2	2					68
<i>Diseases of the locomotive system.</i>								
Synovitis		1					1	74
<i>Diseases of the integumentary system.</i>								
Abscessus		2	2					20
Furunculus		8	8					55
Herpes		1	1					6
Paronychia		1	1					2
Scabies		1	1					3
Unguis involutus		1	1					2
Dermatitis		1	1					2
<i>Diseases of the absorbent system.</i>								
Adenitis		2	2					45
POISONS.								
Alcoholismus acutus		4	4					17
VIOLENT DISEASES AND DEATHS.								
Abrasio		6	5				1	31
Concussio cerebri		1	1					72
Contusio		9	9					44
Fractura		4	3				1	134
Luxatio		1	1					53
Strenua		12	12					67
Vulnus confusum	1	2	3					19
Vulnus incisum		3	3					14
Vulnus laceratum		1	1					9
Vulnus punctum		1	1					3
Concussio spinalis		1				1		1
Total	6	229	215	10	4	1	5	2,381

Passed Assistant Surgeon L. B. Baldwin states in his report for the first quarter 1883:

On the arrival of the Pensacola at Valparaiso, on February 23, every person on board was carefully examined as to their protection against small-pox, the result showing:

Protected by vaccinia before puberty	266
Protected by varioloid	10
Protected by variola	25
Protected by vaccinia before and varioloid after puberty	11
Protected by vaccinia before and variola after puberty	1
Protected by varioloid before and vaccinia after puberty	2
Protected by vaccinia only since puberty	46
Entirely unprotected	1
Total	362

Eighty-six out of 266, vaccinia before puberty, had been revaccinated after puberty with success, none of whom ever had variola or varioloid, but 6 had history and evidence of three successful vaccinations.

One hundred and sixty-eight had been vaccinated within five years, and 10 within twelve years, unsuccessfully. Thirty-three with no history of vaccinia since childhood had been shipped at New York and Mare Island within three years without having been vaccinated; also three others not vaccinated for fifteen years. The only entirely unprotected man on board had shipped at New York (U. S. R. S. Colorado), May 26, 1881. This one and eight others not having vaccinia since childhood, and apparently least protected, as indicated by imperfect cicatrices, were vaccinated with humanized virus, with perfect vaccinia in the one unprotected and in five of the others. If it had been possible to obtain good bovine virus I should have vaccinated "all hands." That which I used had been in tubes two days, and was obtained at the public vaccination office in Valparaiso. The vaccination is there performed almost from arm to arm with excellent results.

Dr. Don Daniel Cavallo informed me that during February, 1883, they had vaccinated 562 persons, 299 males and 263 females. Of these 311 were primary, and 154 revaccinations. Of the primary there were 290 successful, failing only in 21 cases. Of the revaccinations 21 were good, which is an excellent result. This experience leads him to condemn virus from Europe, some of which he had just "tried," as instructed to do by the central bureau of vaccination at Santiago, with the following results:

Virus used.	Number vaccinated.	Successful.	Unsuccessful.	Revaccinations to arm.	Successful.	Unsuccessful.
Belgian bulbs	6	0	6	6	4	2
Belgian tubes	2	0	2	2	1	1
Belgian in one arm and English in other	3	0	3	3	2	1
English tubes	13	8	(*)	.....	.....	.....

* Second and third unknown.

The destruction to life throughout the Republic of Chili has been so alarming that compulsory vaccination has been advocated and discussed in the halls of legislation. In the mean time the government has placed vaccination within the reach of all.

116 REPORT OF THE SURGEON-GENERAL OF THE NAVY.

IROQUOIS.

(Third rate; wood; screw; 695 tons; strength, 187; service, 265 days.

Classification of diseases.	Remaining from last year.	Admitted.	Discharged to duty.	Invalided.		Died.	Remaining at the end of the year.	Total number of sick days.
				To hospital.	From service.			
Zymotic diseases.....	1	29	25			2		
Constitutional diseases.....	3	38	36	4			1	
Diseases of the nervous system.....	1	8	8	1				51
Diseases of the eye.....		3	1	2				19
Diseases of the ear.....		2	2					49
Diseases of the circulatory system.....		5	5					91
Diseases of the respiratory system.....		9	6	3				43
Diseases of the digestive system.....		11	10	1				107
Diseases of the genito-urinary system.....		10	10					7
Diseases of the locomotive system.....		1	1					67
Diseases of the integumentary system.....		9	9					106
Diseases of the absorbent system.....		5	5					1
Fever.....		1	1					84
Violent diseases and deaths.....		17	17					
Total.....	5	148	139	11		2	1	1,398

NOTE.—This vessel was on the Pacific station; was 291 days in port and 74 days at sea. The average number of days each case was under treatment was 9.1, and the daily average number of sick was 11. The deaths were from yellow fever.

REPORT OF VACCINATION

	Successful.	Unsuccessful.
No evidence of previous examination.....	54	81
Presenting good cicatrices.....	16	12
Evidence of former attack of small-pox.....	2	17

NOTE.—From the arms of healthy children.

AGE TABLE.

	15 to 25.	25 to 35.	35 to 45.	45 to 55.	Over 55.
Average number on board.....	86	64	28	8	1
Number sick.....	58	58	25	12	0

DETAILED STATEMENT.

Diseases.	Remaining from last quarter.	Admitted.	Discharged to duty.	Invalided.		Died.	Continued to next quarter.	Number of sick-days.
				To hospital.	From service.			
GENERAL DISEASES.								
Zymotic diseases.								
Febricula.....								
Febris continua simplex.....								
Febris enterica.....	1							
Febris flava.....								
Febris intermittens.....								
Vaccina.....								

DETAILED STATEMENT—Continued.

Diseases.	Remaining from last quarter.	Admitted.	Discharged to duty.	Invalided.		Died.	Continued to next quarter.	Total number of sick-days.
				To hospital.	From service.			
LOCAL DISEASES—Continued.								
<i>Diseases of the eye.</i>								
Amanroisia		1	1					15
Conjunctivitis		2	2					26
<i>Diseases of the ear.</i>								
Otalgia		1	1					4
<i>Diseases of the circulatory system.</i>								
Morbi valvularum cordis		1	1					16
Palpitatio		2	2					16
<i>Diseases of the respiratory system.</i>								
Asthma		1	1					3
Bronchitis acuta	1	3	4					19
Catarrhus bronchialis		3	3					15
Phthisis pneumonica chronica		3	2	1				71
Pneumonia		1	1					16
<i>Diseases of the digestive system.</i>								
Cholera morbus		1	1					1
Colica		9	9					37
Congestio hepatis		2	2					42
Diarrhoea acuta		1	1					6
Dysenteria acuta		3	3					9
Dyspepsia		1	1					4
Hæmorrhoids		2	2					9
Hernia		3	3	3				36
Pharyngitis		2	2					2
Tonsillitis		1	1					3
<i>Diseases of the genito-urinary system.</i>								
Gonorrhœa		1	1					4
Orchitis		1	1					10
<i>Diseases of the locomotive system.</i>								
Hydrops articuli		1	1					9
Synovitis		4	3				1	35
<i>Diseases of the integumentary system.</i>								
Abcessus		7	7					34
Anthrax		1	1					20
Furunculus		3	3					9
Paronychia		1	1					2
<i>Diseases of the absorbent system.</i>								
Adenitis		2	2					9
POISONS.								
Alcoholismus acutus		1	1					1
VIOLENT DISEASES AND DEATHS.								
Abrasio		2	2					5
Ambustio		2	2					6
Contusio		6	6					24
Fractura		2	1				1	50
Struma	1	9	10					85
Vulnus contusum		2	2					11
Vulnus incisum		4	3				1	77
Vulnus laceratum		1	1					13
Vulnus punctum		3	2				1	13
Total	3	147	135	8		1	6	1,366

110 REPORT OF THE SURGEON-GENERAL OF THE NAVY.

IROQUOIS.

[Third rate; wood; screw; 695 tons; strength, 187; service, 365 days.]

Classification of diseases.	Remaining from last year.	Admitted.	Discharged to duty.	Invalided.		Died.	Remaining at the end of the year.	Total number of sick-days.
				To hospital.	From service.			
Zymotic diseases	1	29	28			2		245
Constitutional diseases	3	38	36	4			1	511
Diseases of the nervous system	1	8	8	1				69
Diseases of the eye		3	1	2				24
Diseases of the ear		2	5					19
Diseases of the circulatory system		5	6					49
Diseases of the respiratory system		9	6	3				66
Diseases of the digestive system	11	10	10	1				43
Diseases of the genito-urinary system	10	10	10					107
Diseases of the locomotive system	1	1	1					7
Diseases of the integumentary system	9	9	9					67
Diseases of the absorbent system	5	5	5					106
Poisons	1	1	1					1
Violent diseases and deaths		17	17					84
Total	5	148	139	11		2	1	1,398

NOTE.—This vessel was on the Pacific station; was 291 days in port and 74 days at sea. The average number of days each case was under treatment was 9.1, and the daily average number of sick was 3.8. The deaths were from yellow fever.

REPORT OF VACCINATION.

	Successful.	Unsuccessful.
No evidence of previous examination	54	81
Presenting good cicatrices	16	12
Evidence of former attack of small-pox	2	17

NOTE.—From the arms of healthy children.

AGE TABLE.

	15 to 25.	25 to 35.	35 to 45.	45 to 55.	Over 55.
Average number on board	86	64	28	8	1
Number sick	58	58	25	12	0

DETAILED STATEMENT.

Diseases.	Remaining from last quarter.	Admitted.	Discharged to duty.	Invalided.		Died.	Continued to next quarter.	Total number of sick-days.
				To hospital.	From service.			
GENERAL DISEASES.								
Zymotic diseases.								
Febricula.....		15	15					48
Febris continua simplex.....		1	1					26
Febris enterica.....	1	1	2					66
Febris flava.....		5	3			2		77
Febris intermittens.....		5	5					20
Vaccina.....		2	2					8

DETAILED STATEMENT—Continued.

Diseases.	Remaining from last quarter.	Admitted.	Discharged to duty.	Invalided.		Died.	Continued to next quarter.	Total number of sick-days.
				To hospital.	From service.			
GENERAL DISEASES—Continued.								
Constitutional diseases.								
Adynamia.....	1	1	2					0
Diabetes.....		1		1				9
Lumbago.....		2	2					5
Podagra.....		1	1					9
Rheumatismus acutus.....		21	20	1				218
Rheumatismus chronicus.....		3	2				1	77
Syphilis consecutiva.....	1	5	5	1				107
Syphilis primitiva.....	1	4	4	1				76
LOCAL DISEASES.								
Diseases of the nervous system.								
Nausea marina.....		2	2					5
Neuralgia.....		4	4					16
Paralysis.....		1		1				12
Pleurodynia.....	1	1	2					36
Diseases of the eye.								
Conjunctivitis.....		2	1	1				23
Ophthalmia gonorrhoea.....		1		1				1
Diseases of the ear.								
Otitis.....		2	2					19
Diseases of the circulatory system.								
Hydrops.....		1	1					1
Palpitation.....		4	4					48
Diseases of the respiratory system.								
Bronchitis acuta.....		4	3	1				22
Bronchitis chronica.....		3	2	1				31
Laryngitis.....		1		1				2
Pleuritis.....		1	1					11
Diseases of the digestive system.								
Diarrhoea acuta.....		1	1					4
Dysenteria acuta.....		1	1					3
Dyspepsia.....		3	2	1				9
Hæmorrhoids.....		1	1					5
Icterus.....		1	1					8
Tonsillitis.....		4	4					14
Diseases of the genito-urinary system.								
Calculus (renal).....		1	1					7
Chancroides.....		3	3					34
Gonorrhoea.....		3	3					48
Orchitis.....		3	3					18
Diseases of the locomotive system.								
Arthritis.....		1	1					7
Diseases of the integumentary system.								
Abcessus.....		2	2					9
Chigoe.....		1	1					6
Eczema.....		1	1					5
Furunculæ.....		1	1					7
Paronychia.....		2	2					10
Unguis involutus.....		1	1					25
Urticaria.....		1	1					5
Diseases of the absorbent system.								
Adenitis.....		5	5					106

DETAILED STATEMENT—Continued.

Diseases.	Remaining from last quarter.	Admitted.	Discharged to duty.	Invalided.		Died.	Continued to next quarter.	Total number of sick-days.
				To hospital.	From service.			
POISONS.								
Alcoholiamus acutus.....		1	1					1
VIOLENT DISEASES AND DEATHS.								
Abrasio.....		2	2					28
Concusio cerebri.....		1	1					6
Contusio.....		5	5					11
Luxatio.....		1	1					1
Stremma.....		2	2					5
Vulnus incisum.....		6	6					33
Total.....	4	148	139	11	.....	2	1	1,398

Surgeon J. W. Ross reports the following cases of clinical interest during the first quarter:

Febris flava.—J. L., bugler, aged 30, native of Germany. Went on shore at Callao January 20, 1883, on liberty, and returned on board January 25, being marked on the return as "clean and sober." Slept the greater part of the day and night on the berth deck, apparently not very well. Reported sick January 26, when his appearance is as follows: Face swollen, dusky, flushed; expression wretched, anxious; breath foul and sickening; pulse, 120°–130°, small and compressible; is too stupid to answer questions intelligently; complains of nausea, soreness of stomach, and severe pains in head, back, and limbs; did not remember when he had passed urine or feces; bladder empty. About 9 p. m. copious black vomit and involuntary black tarry stools appeared, and continued at short intervals during the night; catheter introduced several times, but not enough urine obtained for examination; temperature, 102°–103°.

January 27, death preceded by convulsions at 8 a. m., after which the face and neck assumed the bronze color. For obvious reasons no necropsy was made.

Febris flava.—J. T. C., ship's corporal, aged 28, native of Massachusetts. Returned January 26 from 24 hours' liberty ashore at Callao; states that he felt sick on coming on board; all the day and night following had high fever, sick stomach, and severe pains over whole body, but said nothing about it. January 27, just before sick call, threw up about a pint of black vomit, and presented marked yellow fever appearance; exquisite tenderness with burning pain of stomach; pale, scanty, albuminous urine; temperature, 99° 2. No return of black vomit after beginning of treatment, although the severe retching and burning pain of stomach continued during day without material change in general condition. January 28, temperature 99° 2–99° 5; stomach irritable and tender, with occasional vomiting of yellowish white matter; less albumen in the urine. January 29, vomited but once; temperature normal. January 30, convalescent; stomach quiet; urine normal. February 4, discharged and assigned duty as nurse. The skin and conjunctiva are of yellowish brown color.

Febris flava.—V. E., mariner, aged 29, native of Ohio. A point of great interest in this case is that it cannot be satisfactorily traced to infection on shore, but was in all probability contracted on board this ship. Patient's last visit ashore, during which he passed two nights in Callao, ended January 6. He states that about 8 a. m., January 26, he took a drink of water at the scuttle butt, immediately after J. L., the bugler, had done so, using the same tin-cup, and (he thinks) putting his lips to the same place on the rim of the cup; states also that they stood side by side talking with each other, and that L. looked very ill. This was just before L. reported himself ill; within 24 hours of his death. January 29, E. had a slight chill, but as he had not been out of the ship for 22 days yellow fever was not suspected, and he was not admitted to the sick-list. January 31, presents himself with flushed face, suffused eyes, str appearance of debility, distinct tenderness over the epigastrium, stupor, nausea; temperature 100° 8; scanty, cloudy urine. February 1, urine scanty, cloudy, albuminous. February 4, temperature 99°; convalescent, although the urine is slightly albuminous. February 7, no albumen in urine. February 12, discharged and detailed as nurse, the skin and eyes

Febris flava.—J. C. G., mariner, aged 22, native of New York. Returned January 26, from 24 hours' liberty ashore at Callao; had similar liberty a week before. January 30, had chilly sensations about noon, followed by feverishness, headache, nausea, &c. Inconstipated, 31st, presents well-marked symptoms of the invasion stage of yellow fever. February 1, temperature 103° – 104° .8; only 5 fluid ounces of urine passed in 24 hours. February 4, temperature 105° .5, urine highly albuminous. This case was an unusually protracted one, convalescence not setting in before the 18th or 19th day. Profuse hemorrhage from the posterior nares, tongue, and adjacent mucous membranes occurred on five different days; black, fetid bloody stools followed the first of these hemorrhages, and returned at short intervals until the beginning of convalescence. On the ninth night abundant perspiration and copious discharge of urine occurred, together with a fall of temperature of nearly two degrees, and it was hoped a favorable crisis was taking place. Next day, however, the pyrexia increased, and the disease assumed classically typhoid character, which it retained for about eight days. This ataxic stage was coincident with, and probably in a great measure dependent upon, hypostatic consolidation of the posterior part of the lower lobes of both lungs. Convalescence, although steady, was very tedious, the ship being at sea in rather rough weather, making it impossible to give the patient proper food or to secure repose. March 9, at Talcahuano, was detailed to light duty, the only trace of disease being cardiac debility, as shown by rapid feeble pulse and tendency to palpitation upon any overexcitement or undue exertion.

When the second case appeared it was decided safer to consider yellow fever epidemic on board, and it was urged that the Iroquois leave Callao at once for a colder latitude. At 10 p. m. of the same day, January 27, the ship sailed for Talcahuano, Chili, where we arrived March 7, and were placed in quarantine. Immediately on recognition of the first case, the patient, with every possible infected article, was transferred from the sick-bay to the after part of the poop, where a hospital tent was improvised. Its ridge pole was formed by lashing a boat's small spar athwartships to the heads of the two opposite awning stanchions. Over this heavy canvas was stretched and drawn down to the deck on each side. Above this the poop awning was spread, making two thicknesses of canvass between the patient, slung in a cot from the ridge pole, and thus protected from the rain or sun. When necessary the windward end was easily closed. Had we had a greater number of sick, a larger tent would have been made by running the ridge pole fore and aft from the after awning stanchion to the mizzen mast. This hospital was used throughout the epidemic, the cases being carried to it as they showed themselves. In it were also kept for a few days three rather severe cases of febricula, which appeared during the first week out in persons who had recently been on shore in Callao. These three men slept in the same tent with the yellow fever patients and escaped the disease.

Passed Assistant Surgeon Arthur and the apothecary, J. R. Smith, both unprotected, were greatly and almost constantly exposed to danger of infection, yet both escaped, as well as all the other men and officers, although the ship is small, single-decked, and overcrowded. These good results were largely due to the location of the hospital and the material of which it was composed. It was, in my opinion, in the quietest, most easily quarantined, and least infectible part of the ship; from it, all dangerous articles, excreta, &c., were easily and safely thrown overboard; it did not interfere with working the ship at sea under sail; and by never allowing the wind aft, danger of having the infection blown forward among the officers and men was reduced to a minimum. The fact that the hospital was of canvas adds weight to the common belief of the camps around Memphis, Tenn., in 1879, that with ordinary precautions yellow fever could not spread from patients in tents, though it not unfrequently developed in persons who had gone into camp during the stage of incubation; the evidence was very strong that it never spread from them to others, such as attendants, &c., around them. In every case, spurious and genuine, as soon as yellow fever was suspected, active rubefaction over stomach and kidneys and full hypodermic injections of ergotine were resorted to, and they were persevered in so long as there remained any possibility of suppression of urine, vomiting, or hemorrhage. The revulsion was usually begun with mustard and kept up with tincture of iodine. In L.'s case wet cups were applied over the kidneys. Cantharides was avoided out of respect for the urinary mucous membranes. The ergotine was preferably thrown into the subcutaneous cellular tissue over the stomach in order to profit by the counter-irritation as well as by its contraction of small blood-vessels. Experience and observation in this and former epidemics have satisfied me that ergotine will almost infallibly arrest or prevent hemorrhage of the stomach, provided the kidneys have not stopped work. Black vomit seems absolutely uncontrollable when it follows suppression of urine.

In C.'s case the ergotine was first injected into the arms and over the stomach immediately after a discharge of black vomit; there was no return of the symptom, twithstanding considerable retching persisted during the same and the succeeding

. In G. and E.'s cases it was used early and often, and no black vomit occurred. In hemorrhages from the nares, mouth, &c., it seemed to act promptly and efficiently.

Although so many hypodermic injections of ergotine were given, they produced no abscesses or other untoward symptom. Apart from this routine treatment there was no active interference unless imperatively indicated, the object being to keep the patient through alive and as little injured as possible. Opium and its derivatives were religiously abstained from, although the temptation to give morphia hypodermic several times was very strong. Whilst the stomach was irritable we allowed into it except agents (preferably ice) calculated to quiet it. No calomel or mercurial was given, enemata answering every purpose where constipation occurred. Of diuretics digitalis was principally and satisfactorily used, apparently doing also as a heart tonic and anti-pyretic. As quickly as possible after death the body was, with every precaution, buried on San Lorenzo Island, together with all the infected clothing, bedding, &c., the destruction of such articles being required by the Chilean quarantine regulations. Things infected afterwards were thrown overboard, as the ship was at sea. On February 4 the weather was suitable and the infected sick-bay in the berth deck was for about twenty-four hours kept filled with sulphurous acid gas and then thoroughly scrubbed out. It was kept unoccupied as thoroughly ventilated as possible until the 18th of March, when it was again filled with sulphurous acid gas, after which it was used, like the rest of the berth deck, as a sleeping place for the men. The forward part of the spar deck was set apart for the sick, much to their benefit and comfort. March 13, 14, and 15 were devoted to disinfecting the whole ship, from stern to stern, from bilge to spar-deck. Every possible preparation was made, such as "breaking out" everything and everybody on board and thoroughly cleaning every part, &c., and then the necessary quantity of sulphur burned to saturate the atmosphere of the ship with sulphurous acid. While the sulphur was burning the ship was battened down and the gas kept in for several hours. This operation was done twice, after which the disinfection was considered as complete as possible for a wooden ship and the quarantine was lifted. Should the Iroquois be kept in a cool climate for a year any yellow fever poison that may have escaped the disinfecting by sulphurous acid gas will in all probability be destroyed. The probabilities are that the ship did not become infected. Wisdom required us to act as though she did become so.

In the report for the fourth quarter Surgeon Ross reports another case of yellow fever as follows:

Febris flava.—Duration, six days; death; G. A. C., mariner, aged 30. The history of this case can be distinctly traced to infection at the Guadalupe Hospital in Valparaiso, in which a large number of yellow fever patients had been treated during the epidemic of that disease in the early months of the present year (1883). The patient himself, and a companion who was with him at the time, stated that the bad and foul atmosphere that assailed them in one of the wards of the hospital during their visit, so affected them that on leaving the building the patient vomited. After this visit to the hospital remained on shore for two days, but on his return to the ship, a violation of the sanitary regulations of the ship, drinking freely, and on his return to the ship he was confined in the brig on the berth deck for punishment. The above mentioned visit to the hospital took place on the 5th December, and on the 10th, at night, the patient complained of headache and severe pain in the back. As rheumatic pain was a common complaint on board, these symptoms attracted no special attention, and were treated and relieved by local applications and potassium bromide. On the morning of the 12th, the patient having complained again of malaise, he was examined, found to have a temperature of 103° F., gastric irritability and gurgling in the right iliac fossa, symptoms that at first gave rise to a suspicion of typhoid fever, and he was taken out of the brig and placed on the sick-list for treatment. On the 13th, the characteristic symptoms of extreme gastric irritability, tenderness of the scrobiculus cordis on pressure, albuminous urine and burning of the skin appeared, closed the true nature of the disease, and the patient was placed on the poop in a canvas tent, made of the awnings, for isolation and better hygiene. Those who had had yellow fever about ten months previously were detailed as his attendants. On the 14th, after a typical course, this disease terminated in death at 11 o'clock in the morning, and the body was thrown overboard within two hours. All bedding, clothing, and utensils that could have been infected by the patient promptly followed. The berth deck, which he had been confined in was altogether abolished by removing the bulkhead around the foremast and its former site disinfected as well as possible with the aid of sulphur.

Chigoe.—T. C., mariner, aged 32; native of Maryland. January 16, 1883; Callao. A ball of middle toe of left foot enlarged and inflamed; small opening, through which a probe was introduced into a small cavity under integument; the entire toe was inflamed and discolored. January 19, in spite of rest and treatment the inflammation, swelling, and lividity of the whole toe had steadily increased. Inguinal glands on left side enlarged and painful. Laid the cavity freely open; removed a number

te, cheesy, wormy looking bodies too small to be examined with the naked eye; and the cavity with nitric acid. January 22, discharged to duty.

In his report for the second quarter Surgeon Ross remarks as follows:

With the exception of a few days the Iroquois passed the whole of this quarter at paraiso, during which time the weather was unusually raw, windy, and rainy. paraiso is a notoriously unhealthy place, and this winter is more so than ever before. During the month of May there were officially reported 678 deaths in a population of about 100,000. It is one of the strongholds of small-pox, the natives throwing every obstacle in the way of vaccination, to which they are obstinately opposed. There were 243 deaths from small-pox during the month of April and 257 during the month of May. Upon the arrival of the Iroquois in that port it was urged that no party be allowed on shore until the whole ship's company should be vaccinated. Vaccination was commenced with first human lymph in capillary tubes. Only a few of these tubes could be procured at a time, as they were sold to us only as the public vaccinator could prepare and spare them. In the course of the first two weeks we were able to vaccinate no more than 23 persons, only one of them proving successful. In view of the difficulty in obtaining lymph in tubes, and the unsatisfactory results of this method, it was decided to hire a sufficient number of healthy children, of proper vesicles, to come on board, so that vaccination directly from their arms could be practiced. The remarkably good results of this method are shown in the vaccination report and by the fact, that although our men were allowed almost unrestricted weekly liberty, in a city full of small-pox, not a case occurred among them.

ALASKA.

[Second rate; wood; screw; 1,122 tons; service, 44 days; strength, 212; corrected for time, 25.]

Classification of diseases.	Remaining from last year.	Admitted.	Discharged to duty.	Invalided.		Died.	Remaining at the end of the year.	Total number of sick days.
				To hospital.	From service.			
zymotic diseases	1	2	2	1	1	1	1	9
constitutional diseases	1	4	1	1	1	1	1	16
diseases of the nervous system	1	1	1	1	1	1	1	1
diseases of the ear	1	1	1	1	1	1	1	1
diseases of the teeth	1	1	1	1	1	1	1	10
diseases of the circulatory system	1	3	2	1	1	1	1	7
diseases of the respiratory system	1	2	1	1	1	1	1	5
diseases of the digestive system	1	4	1	1	1	1	1	29
diseases of the genito-urinary system	1	2	2	1	1	1	1	16
poisons	1	2	2	1	1	1	1	5
Violent diseases and deaths	1	2	2	1	1	1	1	5
Total	1	23	17	7	7	7	7	100

NOTE.—This report is for the part of the first quarter 1883, whilst the vessel was at the navy-yard, Mare Island, California. The average number of days each case was under treatment was 4.1 and the daily average number of sick was 2.2.

AGE TABLE.

	15 to 25.	25 to 35.	35 to 45.	45 to 55.	Over 55.
Average number on board	83	71	42	14	2
Number sick	9	7	6	3	0

Although so many hypodermic injections of ergotine were given, they produced no abscesses or other untoward symptom. Apart from this routine treatment there was no active interference unless imperatively indicated, the object being to get the patient through alive and as little injured as possible. Opium and its derivatives were religiously abstained from, although the temptation to give morphia hypodermically several times was very strong. Whilst the stomach was irritable we allowed nothing into it except agents (preferably ice) calculated to quiet it. No calomel or other mercurial was given, enemata answering every purpose where constipation occurred. Of diuretics digitalis was principally and satisfactorily used, apparently doing good also as a heart tonic and anti-pyretic. As quickly as possible after death L's body was, with every precaution, buried on San Lorenzo Island, together with all possible infected clothing, bedding, &c., the destruction of such articles being required by the Chilean quarantine regulations. Things infected afterwards were thrown overboard, as the ship was at sea. On February 4 the weather was suitable and the abandoned sick-bay in the berth deck was for about twenty-four hours kept filled with sulphurous acid gas and then thoroughly scrubbed out. It was kept unoccupied and as thoroughly ventilated as possible until the 18th of March, when it was again filled with sulphurous acid gas, after which it was used, like the rest of the berth deck, as a sleeping place for the men. The forward part of the spar deck was set apart for the sick, much to their benefit and comfort. March 13, 14, and 15 were devoted to disinfecting the whole ship, from stem to stern, from bilge to spar-deck. Every possible preparation was made, such as "breaking out" everything and every body, opening up and thoroughly cleaning every part, &c., and then the necessary quantity of sulphur burned to saturate the atmosphere of the ship with sulphurous acid gas. While the sulphur was burning the ship was battened down and the gas kept below for several hours. This operation was done twice, after which the disinfection was considered as complete as possible for a wooden ship and the quarantine was raised. Should the Iroquois be kept in a cool climate for a year any yellow fever poison which may have escaped the disinfecting by sulphurous acid gas will in all probability die out. The probabilities are that the ship did not become infected. Wisdom required us to act as though she did become so.

In the report for the fourth quarter Surgeon Ross reports another case of yellow fever as follows:

Febris flava.—Duration, six days; death; G. A. C., mariner, aged 30½. The origin of this case can be distinctly traced to infection at the Guadalupe Hospital in Callao, in which a large number of yellow fever patients had been treated during the epidemic of that disease in the early months of the present year (1883). The patient himself, and a companion who was with him at the time, stated that the bad odor and foul atmosphere that assailed them in one of the wards of the hospital during their visit, so affected them that on leaving the building the patient vomited. The patient after this visit to the hospital remained on shore for two days longer in violation of the sanitary regulations of the ship, drinking freely, and on his return was confined in the brig on the berth deck for punishment. The above mentioned visit to the hospital took place on the 5th December, and on the 10th, at night, the patient complained of headache and severe pain in the back. As rheumatic lumbago was a common complaint on board, these symptoms attracted no special attention and were treated and relieved by local applications and potassium bromide. On the morning of the 12th, the patient having complained again of malaise, he was examined, found to have a temperature of 103° F., gastric irritability and gurgling in the right iliac fossa, symptoms that at first gave rise to a suspicion of typhoid fever, and he was taken out of the brig and placed on the sick-list for treatment. December 13, the characteristic symptoms of extreme gastric irritability, tenderness over the scrobiculis cordis on pressure, albuminous urine and burning of the skin, disclosed the true nature of the disease, and the patient was placed on the poop-deck in a canvas tent, made of the awnings, for isolation and better hygiene. Three men who had had yellow fever about ten months previously were detailed as his attendants. December 18.—After a typical course, this disease terminated in death at 8.26 this morning, and the body was thrown overboard within two hours. All bedding and utensils that could have been infected by the patient promptly followed. The brig in which he had been confined was altogether abolished by removing the bulkheads around the foremast and its former site disinfected as well as possible with the means at hand.

Chigoe.—T. C., mariner, aged 32; native of Maryland. January 16, 1883; Callao.—Ball of middle toe of left foot enlarged and inflamed; small opening, through which a probe was introduced into a small cavity under integument; the entire toe is inflamed and discolored. January 19, in spite of rest and treatment the inflammation, swelling, and lividity of the whole toe had steadily increased. Inguinal glands on the left side enlarged and painful. Laid the cavity freely open; removed a number of

white, cheesy, wormy looking bodies too small to be examined with the naked eye; filled the cavity with nitric acid. January 22, discharged to duty.

In his report for the second quarter Surgeon Ross remarks as follows :

With the exception of a few days the Iroquois passed the whole of this quarter at Valparaiso, during which time the weather was unusually raw, windy, and rainy. Valparaiso is a notoriously unhealthy place, and this winter is more so than ever before. During the month of May there were officially reported 678 deaths in a population of about 100,000. It is one of the strongholds of small-pox, the natives throwing every obstacle in the way of vaccination, to which they are obstinately opposed. There were 243 deaths from small-pox during the month of April and 257 during the month of May. Upon the arrival of the Iroquois in that port it was urged that no liberty be allowed on shore until the whole ship's company should be vaccinated. The vaccination was commenced with first human lymph in capillary tubes. Only a few of these tubes could be procured at a time, as they were sold to us only as the public vaccinator could prepare and spare them. In the course of the first two weeks we were able to vaccinate no more than 28 persons, only one of them proving successful. In view of the difficulty in obtaining lymph in tubes, and the unsatisfactory results of this method, it was decided to hire a sufficient number of healthy children, with proper vesicles, to come on board, so that vaccination directly from their arms could be practiced. The remarkably good results of this method are shown in the vaccination report and by the fact, that although our men were allowed almost unrestricted weekly liberty, in a city full of small-pox, not a case occurred among them.

ALASKA.

[Second rate; wood; screw; 1,122 tons; service, 44 days; strength, 212; corrected for time, 25.]

Classification of diseases.	Remaining from last year.	Admitted.	Discharged to duty.	Invalided.		Died.	Remaining at the end of the year.	Total number of sick-days.
				To hospital.	From service.			
Zymotic diseases		2	2					9
Constitutional diseases	1	4	4	1				16
Diseases of the nervous system		1	1					1
Diseases of the ear		1	1					1
Diseases of the teeth		1	1					10
Diseases of the circulatory system		1	2	1				1
Diseases of the respiratory system		3	2	1				7
Diseases of the digestive system		2	1	1				5
Diseases of the genito-urinary system		4	1	3				29
Poisons		2	2					16
Violent diseases and deaths		2	2					5
Total	1	23	17	7				100

NOTE.—This report is for the part of the first quarter 1883, whilst the vessel was at the navy-yard, Mare Island, California. The average number of days each case was under treatment was 4.1 and the daily average number of sick was 2.2.

AGE TABLE.

	15 to 25.	25 to 35.	35 to 45.	45 to 55.	Over 55.
Average number on board	83	71	42	14	2
Number sick	9	7	5	3	0

116 REPORT OF THE SURGEON-GENERAL OF THE NAVY.

DETAILED STATEMENT.

Diseases.	Remaining from last quarter.	Admitted.	Discharged to duty.	Invalided.		Died.	Continued to next quarter.	Total number of sick-days.
			To hospital.	From service.				
GENERAL DISEASES.								
Zymotic diseases.								
Febris cerebro spinalis		1	1					6
Febris intermittens		1	1					3
Constitutional diseases.								
Adynamia		1	1					1
Diabetes	1		1					5
Rheumatismus chronicus		2	1	1				5
Syphilia consecutiva		1	1					5
LOCAL DISEASES.								
Diseases of the nervous system.								
Irritatio spinalis		1	1					1
Diseases of the ear.								
Surditas		1	1					1
Diseases of the teeth.								
Parulis		1	1					10
Diseases of the circulatory system.								
Varix		1		1				1
Diseases of the respiratory system.								
Asthma		2	2					6
Pleuritis		1		1				1
Diseases of the digestive system.								
Hæmorrhoids		2	1	1				5
Diseases of the genito-urinary system.								
Chancroides		1		1				13
Cystitis		1		1				1
Orchitis		2	1	1				15
POISONS.								
Alcoholismus acutus		2	2					16
VIOLENT DISEASES AND DEATHS.								
Contusio		1	1					2
Vulnus incisum		1	1					3
Total	1	23	17	7				100

ADAMS.

[Third-rate; wood; screw; 615 tons; service, 365 days; strength, 182.]

Classification of diseases.	Remaining from last year.	Admitted.	Discharged to duty.	Invalided.		Died.	Remaining at the end of the year.	Total number of sick days.
				To hospital.	From service.			
Zymotic diseases	1	11	11	1				77
Constitutional diseases		26	20	4			2	402
Diseases of the nervous system		12	8	4				142
Diseases of the eye		2	1		1			10
Diseases of the ear		1		1				1
Diseases of the teeth		1	1					2
Diseases of the circulatory system		2	3					12
Diseases of the respiratory system		19	14	5				273
Diseases of the digestive system		18	16	1			1	109
Diseases of the genito-urinary system	1	14	14	1				186
Diseases of the integumentary system		6	5				1	53
Diseases of the absorbent system		2	2					59
Poisons		1	1					6
Violent diseases and deaths		25	24			1		106
Total	2	140	119	17	1	1	4	1,438

NOTE.—This vessel was stationed in Alaska, and was 338 days in port and 27 days at sea. The average number of days each case was under treatment was 10.1, and the daily average number of sick was 2.9. The death was from gunshot wound of the abdomen and thorax.

REPORT OF VACCINATION.

	Unsuccessful.	Successful.
Presenting good cicatrices	80	55

AGE TABLE.

	15 to 25.	25 to 35.	35 to 45.	45 to 55.	Over 55
Average number on board	73	79	21	6	3
Number sick	47	60	24	8	3

DETAILED STATEMENT.

Diseases.	Remaining from last quarter.	Admitted.	Discharged to duty.	Invalided.		Died.	Continued to next quarter.	Total number of sick days.
				To hospital.	From service.			
GENERAL DISEASES.								
Zymotic diseases.								
Febricula.....		5	5					22
Febris intermittens.....		1	1					2
Febris remittens.....	1	5	5	1				53
Constitutional diseases.								
Adynamia.....		4	3	1				13
Lumbago.....		3	3					9
Rheumatismus acutus.....		3	3					18
Syphilis consecutiva.....		9	5	3			1	154
Syphilis primitiva.....		7	6				1	208

118 REPORT OF THE SURGEON-GENERAL OF THE NAVY.

DETAILED STATEMENT—Continued.

Diseases.	Remaining from last quarter.	Admitted.	Discharged to duty.	Invalided.		Died.	Continued to next quarter.	Total number of sick-days.
				To hospital.	From service.			
LOCAL DISEASES.								
<i>Diseases of the nervous system.</i>								
Cephalalgia		2	2					9
Dementia		1		1				3
Epilepsia		3	3					35
Meningitis		1		1				21
Nausea marina		1	1					2
Neuralgia		3	2	1				50
Paralysis		1		1				22
<i>Diseases of the eye.</i>								
Conjunctivitis		1			1			8
Hordeolum		1	1					2
<i>Diseases of the ear.</i>								
Surditas		1		1				1
<i>Diseases of the circulatory system.</i>								
Palpitatio		2	2					12
<i>Diseases of the respiratory system.</i>								
Bronchitis acuta		6	6					36
Bronchitis chronica		4	1	3				102
Catarrhus bronchialis		1	1					3
Laryngitis		5	4	1				16
Pneumonia		3	2	1				116
<i>Diseases of the digestive system.</i>								
Constipatio		1	1					1
Diarrhoea acuta		1	1					18
Dyspepsia		3	3					13
Pharyngitis		1	1					2
Prolapsus ani		1		1				22
Tonsillitis		11	10				1	53
<i>Diseases of the genito-urinary system.</i>								
Cystitis		3	3					34
Gonorrhoea		1	1					10
Nephritis		2	1	1				50
Orchitis	1	8	9					92
<i>Diseases of the integumentary system.</i>								
Abscessus		3	3					5
Furunculus		2	2					11
Paronychia		1					1	37
<i>Diseases of the absorbent system.</i>								
Adentitis		2	2					59
POISONS.								
Alcoholismus acutus		1	1					6
VIOLENT DISEASES AND DEATHS.								
Abrasio		1	1					2
Contusio		11	11					51
Stemma		5	5					26
Vulnus contusum		3	3					6
Vulnus incisum		2	2					7
Vulnus laceratum		1	1					4
Vulnus punctum		1	1					9
Vulnus sclopetarium		1				1		1
Total	2	140	119	17	1	1	4	1,438

ALERT.

[Third rate; iron; screw; 541 tons; service, 85 days; strength, 157, and corrected for time 36.]

Classification of diseases.	Remaining from last year.	Admitted.	Discharged to duty.	Invalided.		Died.	Remaining at the end of the year.	Total number of sick-days.
				To hospital.	From service.			
Constitutional diseases		2	1				1	6
Diseases of the nervous system		12	9	3				75
Diseases of the respiratory system		4	4					10
Diseases of the digestive system		2		1			2	6
Diseases of the genito urinary system		2	1				1	19
Diseases of the integumentary system		5	5					43
Diseases of the absorbent system		1	1					1
Violent diseases and deaths		12	11	1				80
Total		41	31	6			4	240

NOTE.—This vessel was in port 61 days and at sea 24 days. The average number of days each case was under treatment was 5.85, and the daily average number of sick was 2.82.

AGE TABLE.

	15 to 25.	25 to 35.	35 to 45.	45 to 55.	Over 55.
Average number on board	72	52	29	4	.....
Number sick	21	12	7	1	.....

DETAILED STATEMENT.

Diseases.	Remaining from last quarter.	Admitted.	Discharged to duty.	Invalided.		Died.	Continued to next quarter.	Total number of sick-days.
				To hospital.	From service.			
GENERAL DISEASES.								
Constitutional diseases.								
Rheumatismus acutus		1					1	1
Syphilis consecutiva		1	1					5
LOCAL DISEASES.								
Diseases of the nervous system.								
Epilepsia		1		1				14
Nausea marina		9	7	2				58
Neuralgia		2	2					3
Diseases of the respiratory system.								
Catarrhus bronchialis		4	4					10
Diseases of the digestive system.								
Dysenteria acuta		2		1			1	4
Hernia		1					1	2
Diseases of the genito-urinary system.								
Orchitis		2	1				1	19

120 REPORT OF THE SURGEON-GENERAL OF THE NAVY.

DETAILED STATEMENT—Continued.

Diseases.	Remaining from last quarter.	Admitted.	Discharged to duty.	Invalided.		Died.	Continued to next quarter.	Total number of sick-days.
			To hospital.	From service.				
LOCAL DISEASES—Continued.								
<i>Diseases of the integumentary system.</i>								
Abscessus		1	1					5
Furunculus		2	2					18
Ulcus								20
<i>Diseases of the absorbent system.</i>								
Adenitis		1		1				1
VIOLENT DISEASES AND DEATHS.								
Abrasio		2	2					9
Contusio		2	2					6
Stemma		3	2	1				7
Vulnus incisum		2	2					26
Vulnus laceratum		1	1					3
Vulnus punctum		2	2					29
Total		41	31	6			4	240

WACHUSETT.

[Third rate; wood; screw; tons, 695; service, 365 days; strength, 174.]

Classification of diseases.	Remaining from last year.	Admitted.	Discharged to duty.	Invalided.		Died.	Remaining at the end of the year.	Total number of sick-days.
				To hospital.	From service.			
Zymotic diseases		12	12					67
Constitutional diseases		15	11	3			1	106
Diseases of the nervous system		17	14	2	1			96
Diseases of the eye		3	1	2				110
Diseases of the teeth		1	1					2
Diseases of the circulatory system		1		1				5
Diseases of the respiratory system		9	9					91
Diseases of the digestive system		20	15	5				84
Diseases of the genito-urinary system		9	7	1			1	266
Diseases of the locomotive system		1	1					5
Diseases of the integumentary system		16	16					180
Diseases of the absorbent system		6	5				1	128
Poisons	1	11	12					54
Violent diseases and deaths		29	29					237
Total	1	150	133	14	1		3	1,491

NOTE.—This vessel was 227 days in port and 138 days at sea. The average number of days each case was under treatment was 9.8, and the daily average number of sick was 4.

AGE TABLE.

	15 to 25.	25 to 35.	35 to 45.	45 to 55.	Over 55.
Average number on board	60	78	24	12	
Number sick	57	53	83	8	

REPORT OF THE SURGEON-GENERAL OF THE NAVY. 121

DETAILED STATEMENT.

Diseases.	Remaining from last quarter.	Admitted.	Discharged to duty.	Invalided.		Died.	Continued to next quarter.	Total number of sick-days.
				To hospital.	From service.			
GENERAL DISEASES.								
<i>Zymotic diseases.</i>								
Febricula.....		9	9					59
Febris intermittens.....		3	3					8
<i>Constitutional diseases.</i>								
Adynamia.....		2		2				80
Lumbago.....		2	2					4
Podagra.....		1	1					6
Rheumatismus acutus.....		5	4				1	46
Rheumatismus chronicus.....		2	1	1				7
Syphilis primitiva.....		1	1					16
Torticollis.....		2	2					7
LOCAL DISEASES.								
<i>Diseases of the nervous system.</i>								
Cephalalgia.....		1	1					3
Dementia.....		1			1			1
Epilepsia.....		1	1					2
Melancholia.....		1		1				14
Neuralgia.....		10	9	1				63
Pleurodynia.....		1	1					3
Vertigo.....		1	1					1
Myalgia.....		1		1				9
<i>Diseases of the eye.</i>								
Asthenopia.....		1	1					9
Myopia.....		1	1					10
Congest. retina.....		11	1					91
<i>Diseases of the teeth.</i>								
Odontalgia.....		1	1					2
<i>Diseases of the circulatory system.</i>								
Morbi valvularum cordis.....		1	1					5
<i>Diseases of the respiratory system.</i>								
Bronchitis acuta.....		2	2					14
Catarrhus bronchialis.....		5	5					72
Catarrhus nasalis.....		2	2					5
<i>Diseases of the digestive system.</i>								
Colica.....		4	4					11
Diarrhoea acuta.....		5	5					21
Dyspepsia.....		2	2					12
Hernia.....		1		1				10
Icterus.....		1	1					17
Pharyngitis.....		3	1	2				5
Tonsillitis.....		4	2	2				8
<i>Diseases of the genito-urinary system.</i>								
Albuminuria.....		2	1	1				67
Chancroides.....		1					1	33
Gonorrhoea.....		3	3					97
Orchitis.....		1	1					7
Urethra strictura.....		2	2					62
<i>Diseases of the locomotive system.</i>								
Synovitis.....		1	1					5
<i>Diseases of the integumentary system.</i>								
Abscessus.....		2	2					22
Furunculus.....		5	5					21
Paronychia.....		4	4					49
Ulcus.....		5	5					88

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DETAILED STATEMENT—Continued.

Diseases.	Remaining from last quarter.	Admitted.	Discharged to duty.	Invalided.		Died.	Continued to next quarter.	Total number of sick- days.
				To hospital.	From service.			
LOCAL DISEASES—Continued.								
<i>Diseases of the absorbent system.</i>								
Adenitis.....		6	5				1	128
POISONS.								
Alcoholismus acutus	1	7	8					24
Vulnus venenatum		4	4					30
VIOLENT DISEASES AND DEATHS.								
Ambustio		1	1					7
Concussio cerebri.....		1	1					9
Contusio		4	4					22
Fractura		1	1					13
Luxatio		1	1					18
Strenima		7	7					90
Vulnus contusum.....		8	8					53
Vulnus incisum.....		2	2					9
Vulnus laceratum		2	2					5
Vulnus punctum		2	2					11
Total	1	150	133	14	1		3	1,491

Surgeon W. H. Jones, in his report for the fourth quarter, 1883, remarks

Vaccination of the crew was uniformly unsuccessful. Bovine virus from the New England Vaccine Company, obtained on requisition January, 1883, at navy-yard, Mare Island, California, was used. In some of the cases the virus was introduced with the vaccinator, and in others the point of a lancet was used. The site of the operation was on the arm about the insertion of the deltoid. The virus was labeled as having been obtained July 9, 1882. A cone from the same company of November 26, 1882, purchased in San Francisco, gave no better results. Both kinds were repeatedly tried on children, and not a single case was successful.

RANGER.

[Third rate; wood; screw; 541 tons; service, 365 days; strength, 145.]

Classification of diseases.	Remaining from last year.	Admitted.	Discharged to duty.	Invalided.		Died.	Remaining at the end of the year.	Total number of sick-days.
				To hospital.	From service.			
Zymotic diseases		22	22					111
Constitutional diseases.....	1	31	27	5				193
Diseases of the nervous system.....		6	5	1				38
Diseases of the eye		3	2	1				4
Diseases of the teeth		4	4					8
Diseases of the respiratory system.....		22	18	4				117
Diseases of the digestive system.....		25	23				2	82
Diseases of the genito-urinary system.....		3	1	1			1	11
Diseases of the integumentary system.....	2	26	26				2	176
Diseases of the absorbent system		11	8	3			2	170
Poisons		6						16
Violent diseases and deaths.....	2	41	40	1			2	261
Total	5	200	182	16			7	1,187

NOTE.—This vessel was in port 233 days, and 132 days at sea. The average number of days each case was under treatment was 5.7, and the daily average number of sick was 3.2.

AGE TABLE.

	15 to 25.	25 to 35.	35 to 45.	45 to 55.	Over 55.
Average number on board	63	57	20	4	1
Number sick	84	84	84	3	0

DETAILED STATEMENT.

Diseases.	Remaining from last quarter.	Admitted.	Discharged to duty.	Invalided.		Died.	Continued to next quarter.	Total number of sick-days.
			To hospital.	From service.				
GENERAL DISEASES.								
Zymotic diseases.								
Febris continua simplex		6	6					18
Febris intermittens		4	4					6
Febris remittens		12	12					87
Constitutional diseases.								
Adynamia		4	4					11
Anæmia		2	2					4
Diabetes (mellitus)		1		1				10
Lumbago		5	5					15
Rheumatismus acutus		6	6					68
Rheumatismus chronicus	1	1	2					23
Syphilis consecutiva		10	6	4				42
Syphilis primitiva		2	2					20
LOCAL DISEASES.								
Diseases of the nervous system.								
Insomnia		2	1	1				21
Neuralgia		1	1					6
Pleurodynia		2	2					9
Vertigo		1	1					2
Diseases of the eye.								
Conjunctivitis		1	1					1
Hordeolum		1	1					1
Dacrocystitis, chronica		1		1				2
Diseases of the teeth.								
Odontalgia		2	2					3
Parulis		2	2					5
Diseases of the respiratory system.								
Asthma		3	1	2				27
Bronchitis acuta		4	4					30
Bronchitis chronica		3	2	1				14
Catarrhus bronchialis		4	4					16
Catarrhus nasalis		5	5					12
Phthisis pneumonica acuta		1		1				14
Pleuritis		2	2					4
Diseases of the digestive system.								
Colica		4	4					9
Congestio hepatis		2	1				1	7
Diarrhoea acuta		8	7				1	17
Dysenteria acuta		1	1					2
Pharyngitis		2	2					6
Tonsillitis		6	6					35
Vermes (Taenia)		1	1					3
Typhlitis		1	1					3
Diseases of the genito-urinary system.								
Albuminuria		1		1				7
Gonorrhoea		1		1				1
Oorchitis		1	1					3

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DETAILED STATEMENT—Continued.

Diseases.	Remaining from last quarter.	Admitted.	Discharged to duty.	Invalided.		Died.	Continued to next quarter.	Total number of sick days.
				To hospital.	From service.			
LOCAL DISEASES—Continued.								
<i>Diseases of the integumentary system.</i>								
Abscessus	1	6	7					56
Furunculus		15	14				1	76
Herpes		1	1					12
Paronychia		3	2				1	27
Pemphigus	1		1					3
Ulcus		1	1					2
<i>Diseases of the absorbent system.</i>								
Adenitis		11	8	3				170
POISONS.								
Alcoholismus acutus		6	6					16
VIOLENT DISEASES AND DEATHS.								
Abrasio		3	3					13
Ambustio		1	1					5
Contusio	1	12	13					69
Explosio		2	1				1	2
Fractura	1		1					17
Strennum		11	9	1			1	62
Vulnus contusum		9	9					80
Vulnus laceratum		1	1					8
Vulnus punctum		2	2					5
Total	5	200	182	16			7	1,187

INDEPENDENCE.

[Third rate; sails; wood; tons, 1,291; service, 365 days; strength, 154.]

Classification of diseases.	Remaining from last year.	Admitted.	Discharged to duty.	Invalided.		Died.	Remaining at the end of the year.	Total number of sick days.
				To hospital.	From service.			
Zymotic diseases		18	15	3				101
Constitutional diseases		13	9	3	1			62
Diseases of the nervous system		3		1	2			8
Diseases of the eye		1			1			5
Diseases of the ear		1			1			7
Diseases of the teeth		1	1					1
Diseases of the respiratory system		71	59	11		1		496
Diseases of the digestive system		22	19	3				86
Diseases of the genito-urinary system		18	13	5				162
Diseases of the integumentary system		14	14					110
Diseases of the absorbent system		1	1					10
Poisons		2	2					6
Violent diseases and deaths		30	29	1				273
Feigned diseases		3	3					10
Total		198	165	27	5	1		1,337

NOTE.—This vessel was the receiving-ship at Mare Island, California. The average number of days each case was under treatment was 6.5 days, and the daily average number of sick was 3.6. The death was from chronic pneumonic plithisia. The feigned diseases were vertigo and lumbago; the latter was detected by the use of ipocacuanha.

REPORT OF VACCINATION.

	Successful.	Unsuccessful.
No evidence of previous examination.....	4	14
Presenting good cicatrices.....	26	164
Evidence of former attack of small-pox.....		10

NOTE.—Animal virus in cone.

AGE TABLE.

	15 to 25.	25 to 35.	35 to 45.	45 to 55.	Over 55.
Average number on board.....	70	47	21	10	6
Number sick.....	92	58	28	12	8

DETAILED STATEMENT.

Diseases.	Remaining from last quarter.	Admitted.	Discharged to duty.	Invalided.		Died.	Continued to next quarter.	Total number of sick-days.
				To hospital.	From service.			
GENERAL DISEASES.								
Zymotic diseases.								
Febris continua simplex.....		1	1					2
Febris intermittens.....		9	9					42
Febris remittens.....		3		3				3
Parotitis.....		1	1					6
Vaccina.....		4	4					48
Constitutional diseases.								
Adynamia.....		1	1					3
Rheumatismus acutus.....		2	2					11
Rheumatismus chronicus.....		6	5	1				31
Syphilis consecutiva.....		3	1	1	1			15
Syphilis primitiva.....		1		1				2
LOCAL DISEASES.								
Diseases of the nervous system.								
Epilepsia.....		2			2			6
Neuralgia.....		1		1				2
Diseases of the eye.								
Amaurosis.....		1			1			5
Diseases of the ear.								
Surditas.....		1			1			7
Diseases of the teeth.								
Odontalgia.....		1	1					1
Diseases of the respiratory system.								
Bronchitis acuta.....		44	38	6				304
Bronchitis chronica.....		6	3	3				98
Catarrhus bronchialis.....		16	16					57
Phthisis pneumonica chronica.....		4	2	1		1		36
Pleuritis.....		1		1				1
Diseases of the digestive system.								
Cholera morbus.....		1	1					1
Diarrhoea acuta.....		3	3					8
Dysenteria acuta.....		4	4					11
Hæmorrhoids.....		1	1					1
Tonsillitis.....		11	8	3				58
Vermes.....		2	2					7

DETAILED STATEMENT—Continued.

Diseases.	Remaining from last quarter.	Admitted.	Discharged to duty.	Invalided.		Died.	Continued to next quarter.	Total number of sick-days.
			To hospital.	From service.				
LOCAL DISEASES—Continued.								
<i>Diseases of the genito-urinary system.</i>								
Albuminuria		1		1				1
Balanitis		1	1					2
Enuresis		1	1					2
Gonorrhoea		6	6					121
Hydrocele		2	2					15
Orethritis		1	1					14
Prostatitis		1		1				1
Urethra strictura		5	2	3				6
<i>Diseases of the integumentary system.</i>								
Abcessus		5	5					37
Eczema		1	1					10
Furunculus		7	7					52
Herpes		1	1					11
<i>Diseases of the absorbent system.</i>								
Adenitis		1	1					10
POISONS.								
Alcoholismus acutus		2	2					6
VIOLENT DISEASES AND DEATHS.								
Abrasio		1	1					17
Ambustio		2	2					30
Contusio		5	5					50
Fractura		1		1				1
Luxatio		1	1					12
Stremma		10	10					111
Vulnus contusum		1	1					10
Vulnus incisum		4	4					19
Vulnus laceratum		4	4					20
Vulnus punctum		1	1					3
FEIGNED DISEASES.								
Vertigo		1	1					1
Lumbago		2	2					9
Total		198	165	27	5	1		1,337

ONWARD.

[Wood; sails; tons, 794; service, 365 days; strength, 38.]

Classification of diseases.	Remaining from last year.	Admitted.	Discharged to duty.	Invalided.		Died.	Remaining at the end of the year.	Total number of sick-days.
				To hospital.	From service.			
Zymotic diseases	1	8	6	1		2		69
Constitutional diseases		2	2					33
Diseases of the nervous system		1	1					3
Diseases of the eye		3	3					41
Diseases of the respiratory system	1		1					11
Diseases of the digestive system		3	3					8
Diseases of the genito-urinary system		3	3					33
Diseases of the integumentary system		2	2					17
Violent diseases and deaths		4	4					81
Total	2	25	26	1		2		234

NOTE.—This vessel is used as the store-ship at Callao, Peru. The number of days each case was under treatment was 8.32. The daily average number of sick was 64. The deaths were one each from enteric and yellow fever.

AGE TABLE.

	15 to 25.	25 to 35.	35 to 45.	45 to 55.	Over 55.
Average number on board.....	16	11	7	2	2
Number sick.....	12	7	7	1	1

DETAILED STATEMENT.

Diseases.	Remaining from last quarter.	Admitted.	Discharged to duty.	Invalided.		Died.	Continued to next quarter.	Total number of sick-days.
				To hospital.	From service.			
GENERAL DISEASES.								
<i>Zymotic diseases.</i>								
Febris continua simplex.....		1	1					2
Febris enterica.....		1				1		11
Febris flava.....		1				1		8
Febris intermittens.....	1	3	3	1				20
Febris remittens.....		2	2					28
<i>Constitutional diseases.</i>								
Rheumatismus chronicus.....		1	1					6
Syphilis consecutiva.....		1	1					26
LOCAL DISEASES.								
<i>Diseases of the nervous system.</i>								
Neuralgia.....		1	1					2
<i>Diseases of the eye.</i>								
Conjunctivitis.....		3	3					41
<i>Diseases of the respiratory system.</i>								
Asthma.....	1		1					11
<i>Diseases of the digestive system.</i>								
Colica.....		2	2					4
Dysentery acuta.....		1	1					4
<i>Diseases of the genito-urinary system.</i>								
Gonorrhoea.....		1	1					6
Orchitis.....		2	2					17
<i>Diseases of the integumentary system.</i>								
Abscessus.....		1	1					10
Furunculus.....		1	1					7
VIOLENT DISEASES AND DEATHS.								
Abrasio.....		1	1					4
Ambustio.....		1	1					7
Stremma.....		1	1					3
Vulnus contusum.....		1	1					17
Total.....	2	26	25	1		2		234

Passed Assistant Surgeon C. T. Hibbett, U. S. N., reports the following concerning the case of yellow fever:

H. C., apothecary, aged 24, Chicago, Ill. This case was admitted May 30, 1883, with yellow fever. The disease had its origin in the line of duty, having been conveyed to him indirectly from the infected city of Callao, Peru.

The patient had not been on the main land for eight weeks, but had visited the island of San Lorenzo with others of the crew. There were two cases diagnosed as continued fever among the few inhabitants of the island on or about May 10. The invasion is described by Passed Assistant Surgeon Hibbett: "The disease was ushered in by a chill lasting about one hour, about 3 p. m. May 30. For a week or ten days previously there had been a feeling of general malaise, loss of appetite, slight frontal headache, and soreness in back. The chill was followed by a hot and dry skin, intense pain in the region of the kidneys, constipation, injected conjunctiva, tongue furred, slight nausea, and kidneys inactive; temperature, 104.2°; pulse, 124. There were no peculiar departures from the usual course of yellow fever, and the patient died on the 9th day after the invasion. The body was interred at 5 p. m., one and a half hours after death, the clothing, bedding, &c., used by the patient, as well as those employed in nursing, was destroyed. The vessel was fumigated with tar and sulphur for ten days after death and a solution of sulphate of iron freely used in the bilges."

HASSLER.

[Coast Survey steamer; strength, 42; service, 365 days.]

Classification of diseases.	Remaining from last year.	Admitted.	Discharged to duty.	Invalided.		Died.	Remaining at the end of the year.	Total number of sick-days.
				To hospital.	From service.			
Zymotic diseases	1	1	.....	.....	.....	.....	2
Constitutional diseases	2	2	.....	.....	.....	.....	14
Diseases of the eye	1	1	1	.....	.....	.....	.....	3
Diseases of the respiratory system	1	.....	1	.....	.....	.....	25
Diseases of the digestive system	3	2	1	.....	.....	.....	7
Diseases of the integumentary system	2	2	.....	.....	.....	.....	45
Diseases of the absorbent system	2	2	.....	.....	.....	.....	30
Poisons	3	3	1	.....	.....	.....	37
Violent diseases and deaths	3	3	.....	.....	.....	.....	44
Total	1	18	16	3	.....	.....	.....	209

NOTE.—This vessel was on duty on the Coast Survey upon the Pacific and was 338 days in port and 32 at sea. The average number of days each case was under treatment was 11, and the daily average number of sick .57.

AGE TABLE.

	15 to 25.	25 to 35.	35 to 45.	45 to 55.	Over 55.
Average number on board	3	29	9	9	1
Number sick	3	12	4	0	9

DETAILED STATEMENT.

Diseases.	Remaining from last quarter	Admitted.	Discharged to duty.	Invalided.		Died.	Continued to next quarter.	Total number of sick-days.
				To hospital.	From service.			
GENERAL DISEASES.								
<i>Zymotic diseases.</i>								
Febricula.....		1	1					2
<i>Constitutional diseases.</i>								
Adynamia.....		1	1					4
Podagra.....		2	2					10
LOCAL DISEASES.								
<i>Diseases of the eye.</i>								
Conjunctivitis.....	1		1					3
<i>Diseases of the respiratory system.</i>								
Emphysema.....		1		1				35
<i>Diseases of the digestive system.</i>								
Cholera morbus.....		1	1					2
Constipation.....		1		1				4
Tonsillitis.....		1	1					3
<i>Diseases of the integumentary system.</i>								
Abscessus.....		1	1					27
Furunculus.....		1	1					18
<i>Diseases of the absorbent system.</i>								
Adenitis.....		2	2					30
POISONS.								
Vulnus venenatum.....		3	2	1				37
VIOLENT DISEASES AND DEATHS.								
Contusio.....		1	1					37
Stremma.....		2	2					7
Total.....	1	18	16	3				209

MCARTHUR.

[Coast Survey steamer; service, 365 days; strength, 33.]

Classification of diseases.	Remaining from last year.	Admitted.	Discharged to duty.	Invalided.		Died.	Remaining at the end of the year.	Total number of sick-days.
				To hospital.	From service.			
Zymotic diseases.....		1	1					6
Constitutional diseases.....		3	2					17
Disease of the eye.....		1		1				2
Disease of the respiratory system.....		4	4					16
Disease of the digestive system.....		1	1					5
Violent diseases and deaths.....		4	3			1		13
Total.....		14	12	1		1		59

NOTE.—This vessel was 198 days at sea and 167 days in port. The average number of days each case was under treatment was 4.2, and the daily average number sick was .13. The death was from drowning.

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AGE TABLE.

	15 to 25.	25 to 35.	35 to 45.	45 to 55.	Over 55.
Average number on board	8	16	6	3	0
Number sick	4	10	0	0	0

DETAILED STATEMENT.

Diseases.	Remaining from last quarter.	Admitted.	Discharged to duty.	Invalided.		Died.	Continued to next quarter.	Total number of sick days.
				To hospital.	From service.			
GENERAL DISEASES.								
Zymotic diseases.								
Febris intermittens.....		1	1					6
Constitutional diseases.								
Podagra.....		1		1				2
LOCAL DISEASES.								
Diseases of the eye.								
Conjunctivitis.....		3	3					17
Diseases of the respiratory system.								
Bronchitis acuta.....		1	1					10
Catarrhus bronchialis.....		3	3					6
Diseases of the digestive system.								
Tonsillitis.....		1	1					5
VIOLENT DISEASES AND DEATHS.								
Contusio.....		1	1					5
Stremma.....		1				1		3
Submersio.....		1	1					1
Vulnus incisum.....		1	1					4
Total.....		14	12	1		1		59

SANITARY CONDITION
OF THE
EUROPEAN STATION.



THE EUROPEAN SQUADRON.

employed upon this station were the Trenton (flag-ship), and Quinnebaug.

force employed was 1,161, and corrected for time was 792. strength of the total force was: From invaliding, 35, or at 44+ per 1,000; from deaths, 8, or at the rate of 10+ per

loss of effective force represented by the number of cases treated 4, with 6,776 sick-days, giving an average of 10.6+ days for each th a daily average number of sick of 18.5+.

ons for treatment per 1,000 of the mean strength was at or 300+, and the following table presents the ratio per 1,000 class of diseases:

1	6	1,161
	for time	792
	per 1,000	800
	cases	54
	mal diseases	93
	of the nervous system	49
	eye	12
	ear	2
	of the circulatory system	10
	of the respiratory system	82
	of the digestive system	98
	of the genito-urinary system	79
	of the locomotive system	1
	of the integumentary system	104
	of the absorbent system	17
	malignant tumors and cysts	1
	ent diseases and deaths	17
		175

SUMMARY OF EUROPEAN STATION.

[Strength, 1,161; corrected for time, 792.]

Classification of diseases.	Remaining from last year.	Admitted.	Discharged to duty,	Invalided.		Died.	Remaining at the end of the year.	Total number of sick-days.
				To hospital.	From service.			
cases		43	37	2		2	2	343
mal diseases	3	71	61	7	1	1	4	1,250
of the nervous system		39	34	4				171
of eye		10	10					49
of ear		2	2					6
of the circulatory system		8	5	2		1		150
of the respiratory system	1	64	58	3	1	2	1	605
of the digestive system	1	77	72	4		1	1	420
of the genito-urinary system	3	60	54	3			6	1,012
of the locomotive system		1					1	2
of the integumentary system	1	82	76	3			4	997
of the absorbent system		14	13				1	269
malignant tumors and cysts		1	1					25
cases and deaths	3	14	13	1				35
		136	127	4			8	1,442
T	12	622	563	33	2	8	28	6,776

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REPORT OF VACCINATION.

	Successful.	Unsuccessful.
No evidence of previous examination.....	22	37
Presenting good cicatrices.....	57	163
Evidence of former attack of small-pox.....		1

AGE TABLE.

	15 to 25.	25 to 35.	35 to 45.	45 to 55.	Over 55.
Average number on board.....	588	397	132	37	7
Number sick.....	303	228	81	17	5

DETAILED STATEMENT.

Diseases.	Remaining from last quarter.	Admitted.	Discharged to duty.	Invalided.		Died.	Continued to next quarter.	Total number of sick-days.
				To hospital.	From service.			
GENERAL DISEASES.								
<i>Zymotic diseases.</i>								
Erysipelaa.....		3	3				2	93
Febricula.....		1	1					5
Febris cerebro-spinalis.....		1				1		4
Febris continua simplex.....		1	1					3
Febris enterica.....		2		1		1		4
Febris intermittens.....		20	19	1				102
Febris remittens.....		7	7					79
Morbilli.....		2	2					28
Vaccina.....		4	4					26
<i>Constitutional diseases.</i>								
Adynamia.....	1	9	9			1		64
Hydrops.....		1	1					5
Lumbago.....		8	8					48
Podagra.....		4	4					36
Rheumatismus acutus.....		13	11	1			1	227
Rheumatismus chronicus.....	1	20	14	5		1	2	560
Syphilis consecutiva.....	1	7	7		1			105
Syphilis primitiva.....		9	7	1			1	306
LOCAL DISEASES.								
<i>Diseases of the nervous system.</i>								
Cephalalgia.....		15	14	1				61
Menigitis.....		2		1		1		15
Nausea marina.....		6	6					29
Neuralgia.....		14	12	2				60
Pleurodynia.....		3	2					6
<i>Diseases of the eye.</i>								
Conjunctivitis.....		8	8					37
Hordeolum.....		3	2					12
<i>Diseases of the ear.</i>								
Otitis.....		3	2					6
<i>Diseases of the circulatory system.</i>								
Morbi valvularum cordis.....		1				1		51
Palpitatio.....		5	3	2				91
Syncope.....		1	1					1
Hæmorrhage.....		1	1					7
<i>Diseases of the respiratory system.</i>								
Bronchitis acuta.....		17	17					109
Bronchitis chronica.....		5	5					14
Catarrhus bronchialis.....	1	20	21					94
Catarrhus nasalis.....		2	2					9
Hæmoptysis.....		2	2					24
Phtisis pneumonica chronica.....		4		2	1		1	72
Pleuritis.....		4						49
Pneumonia.....		10	7	1		2		286

DETAILED STATEMENT—Continued.

Diseases.	Remaining from last quarter.	Admitted.	Discharged to duty.	Invalided.		Died.	Continued to next quarter.	Total number of sick-days.
				To hospital.	From service.			
LOCAL DISEASES—Continued.								
<i>Diseases of the digestive system.</i>								
Cholera morbus.....		4	4					20
Colica.....		6	5				1	18
Constipatio.....		3	3					6
Diarrhœa acuta.....	1	27	28					119
Diarrhœa chronica.....		2	1			1		27
Dyspepsia.....		3	3					25
Hæmorrhoids.....		3	3					20
Hernia.....		6	3	3				43
Icterus.....		1	1					6
Stomatitis.....		1	1					12
Tonsillitis.....		21	21					124
<i>Diseases of the genito-urinary system.</i>								
Balanitis.....		2	2					91
Chancroides.....	3	12	15					252
Cystitis.....		5	4				1	83
Emuresis.....		2	2					13
Gonorrhœa.....		18	16				2	273
Hæmaturia.....		2	1				1	20
Hydrocele.....		1	1					1
Nephritis.....		2		2				17
Orchitis.....		12	10				2	203
Prostatitis.....		1	1					19
Renal colic.....		1	1					33
Urethra strictura.....		1	1					6
Varicocele.....		1		1				1
<i>Diseases of the locomotive system.</i>								
Synovitis.....		1					1	2
<i>Diseases of the integumentary system.</i>								
Abscessus.....		33	32				1	334
Eczema.....		2	2					81
Furunculul.....	1	37	35				3	243
Impetigo.....		2	2					106
Onychia.....		1	1					12
Sycosis.....		1	1					16
Ulcus.....		6	3	3				253
<i>Diseases of the absorbent system.</i>								
Adenitis.....		14	13				1	269
<i>Non-malignant tumors and cysts.</i>								
Lupus.....		1	1					25
POISONS.								
Alcoholismus acutus.....		13	12	1				29
Vulnus venenatum.....		1	1					9
VIOLENT DISEASES AND DEATHS.								
Abrasio.....		7	6				1	58
Ambustio.....		8	8					121
Contusio.....	1	45	45				1	259
Explosio.....		2	1	1				41
Fractura.....		6	5	1				133
Luxatio.....		2	1				1	36
Stremma.....	1	23	22	1			1	226
Vulnus contusum.....		28	23	1			4	306
Vulnus incisum.....	1	5	6					31
Vulnus laceratum.....		3	3					139
Vulnus punctum.....		6	6					67
Vulnus sclopetarium.....		1	1					35
Total.....	12	622	563	33	2	8	28	6,776

136 REPORT OF THE SURGEON-GENERAL OF THE NAVY.

TRENTON.

[Second rate; wood; screw; 2,300 tons; 92 days' service; strength, 493; strength corrected for time, 124.

Classification of diseases.	Remaining from last year.	Admitted.	Discharged to duty.	Invalided.		Died.	Remaining at the end of the year.	Total number of sick-days.
				To hospital.	From service.			
Zymotic diseases		10	9	1				66
Constitutional diseases		5	4				1	31
Diseases of the nervous system		7	4	3				28
Diseases of the eye		1	1					11
Diseases of the circulatory system		2	1	1				7
Diseases of the respiratory system		9	9					51
Diseases of the digestive system		10	6	3			1	72
Diseases of the genito-urinary system		6	5	1				31
Diseases of the locomotive system		1					1	2
Diseases of the integumentary system		13	11	1			1	95
Diseases of the absorbent system		2	2					48
Poisons		1		1				1
Violent diseases and deaths		22	17	1			4	253
Total		89	69	12			8	696

NOTE.—In commission 92 days; 62 in port, 30 at sea. The average number of days each case was under treatment was 7.8, and the daily average number of sick was 7.5.

REPORT OF VACCINATION.

	Successful.	Unsuccessful.
No evidence of previous examination		1
Presenting good cicatrices	9	63

NOTE.—Bovine virus used.

AGE TABLE.

	15 to 25.	25 to 35.	35 to 45.	45 to 55.	Over 55.
Average number on board	255	170	53	14	1
Number sick	43	35	10	1	

DETAILED STATEMENT.

Diseases.	Remaining from last quarter.	Admitted.	Discharged to duty.	Invalided.		Died.	Continued to next quarter.	Total number of sick-days.
				To hospital.	From service.			
GENERAL DISEASES.								
Zymotic diseases.								
Febricula.....		1	1					5
Febris intermittens.....		4	3	1				11
Febris remittens.....		2	2					11
Morbilli.....		2	2					28
Vaccina.....		1	1					11
Constitutional diseases.								
Adynamia.....		1	1					9
Lumbago.....		2	2					14
Rheumatismus acutus.....		2	1				1	8

DETAILED STATEMENT—Continued.

Diseases.	Remaining from last quarter.	Admitted.	Discharged to duty.	Invalided.		Died.	Continued to next quarter.	Total number of sick days.
				To hospital.	From service.			
LOCAL DISEASES.								
<i>Diseases of the nervous system.</i>								
Cephalalgia.....		1		1				5
Nausea marina.....		2	2					
Neuralgia.....		3	1	2				13
Pleurodynia.....		1	1					3
<i>Diseases of the eye.</i>								
Conjunctivitis.....		1	1					11
<i>Diseases of the circulatory system.</i>								
Palpitation.....		1		1				6
Syncope.....		1	1					1
<i>Diseases of the respiratory system.</i>								
Bronchitis acuta.....		3	3					13
Catarrhus bronchialis.....		4	4					21
Pleuritis.....		2	2					17
<i>Diseases of the digestive system.</i>								
Colica.....		1					1	8
Diarrhœa acuta.....		1	1					3
Dyspepsia.....		1	1					19
Hæmorrhœa.....		1		1				2
Hernia.....		2		2				16
Tonsillitis.....		4	4					24
<i>Diseases of the genito-urinary system.</i>								
Chancroides.....		2	2					11
Enuresis.....		2	2					13
Gonorrhœa.....		1	1					6
Varicocele.....		1		1				1
<i>Diseases of the locomotive system.</i>								
Synovitis.....		1					1	2
<i>Diseases of the integumentary system.</i>								
Abcessus.....		9	8				1	40
Eczema.....		1	1					1
Furunculus.....		1	1					9
Ulcus.....		2	1	1				45
<i>Diseases of the absorbent system.</i>								
Adenitis.....		2	2					48
POISONS.								
Alcoholismus acutus.....		1		1				1
VIOLENT DISEASES AND DEATHS.								
Abrasio.....		1					1	1
Ambustio.....		1	1					38
Contusio.....		6	6					43
Stremma.....		7	7					72
Vulnus contusum.....		7	3	1			3	99
Total.....		89	69	12			8	696

138 REPORT OF THE SURGEON-GENERAL OF THE NAVY.

LANCASTER.

[Second rate; wood; screw; tons, 2,120; service, 365 days; strength, 452.]

Classification of diseases.	Remaining from last year.	Admitted.	Discharged to duty.	Invalided.		Died.	Remaining at the end of the year.	Total number of sick-days.
				To hospital.	From service.			
Zymotic diseases.....		15	11	1		2	1	124
Constitutional diseases.....	1	30	30	6	1	1	2	788
Diseases of the nervous system.....		10	8	1		1		63
Diseases of the eye.....		2	2					14
Diseases of the ear.....		1	1					2
Diseases of the circulatory system.....		5	4	1				92
Diseases of the respiratory system.....		30	24	2	1	2	1	393
Diseases of the digestive system.....		24	23	1				96
Diseases of the genito-urinary system.....	3	26	26	2			1	439
Diseases of the integumentary system.....	1	34	31	2			2	571
Diseases of the absorbent system.....		3	3					78
Non-malignant tumors and cysts.....		1	1					25
Poisons.....		4	4					14
Violent diseases and deaths.....	2	56	53	3			2	745
Total.....	7	250	221	19	2	6	9	3,444

NOTE.—This vessel was 306 days in port, and 59 days at sea. The average number of days each case was under treatment was 13.4, and the daily average number of sick was 9.4. The deaths were 1 from enteric fever, 1 from cerebro spinal fever, 1 from adynamia, 1 from meningitis, and 2 from pneumonia.

REPORT OF VACCINATION.

	Successful.	Unsuccessful.
No evidence of previous examination.....	6	8
Presenting good cicatrices.....	5	10

NOTE.—Bovine lymph in tubes; over the deltoid.

AGE TABLE.

	15 to 25.	25 to 35.	35 to 45.	45 to 55.	Over 55.
Average number on board.....	238	140	56	13	5
Number sick.....	113	92	37	10	5

DETAILED STATEMENT.

Diseases.	Remaining from last quarter.	Admitted.	Discharged to duty.	Invalided.		Continued to next quarter.	Total number of sick- days.
				To hospital.	From service.		
GENERAL DISEASES.							
<i>Zymotic diseases.</i>							
Erysipelas.....		4	3			1	77
Febris cerebro-spinalis.....		1			1		4
Febris enterica.....		12		1			4
Febris intermittens.....		7	7				32
Febris remittens.....		1	1				7

DETAILED STATEMENT—Continued.

Diseases.	Remaining from last quarter.	Admitted.	Discharged to duty.	Invalided.		Died.	Continued to next quarter.	Total number of sick days.
				To hospital.	From service.			
GENERAL DISEASES—Continued.								
Constitutional diseases.								
Adynamia		1				1		9
Podagra		4	4					36
Rheumatismus acutus		6	5	1				119
Rheumatismus chronicus		16	9	5			2	376
Syphilis consecutiva	1	6	6		1			88
Syphilis primitiva		6	6					160
LOCAL DISEASES.								
Diseases of the nervous system.								
Cephalalgia		5	5					30
Meningitis		2		1		1		15
Neuralgia		3	3					18
Diseases of the eye.								
Conjunctivitis		1	1					4
Hordeolum		1	1					10
Diseases of the ear.								
Otitis		1	1					2
Diseases of the circulatory system.								
Hæmorrhage		1	1					7
Palpitatio		4	3	1				85
Diseases of the respiratory system.								
Bronchitis acuta		11	11					69
Bronchitis chronica		5	5					14
Phthisis pneumonia chronica		3		1	1		1	55
Pleuritis		1	1					20
Pneumonia		10	7	1		2		235
Diseases of the digestive system.								
Diarrhœa acuta		11	11					37
Dyspepsia		2	2					6
Hernia		4	3	1				27
Icterus		1	1					6
Tonsillitis		6	6					20
Diseases of the genito-urinary system.								
Chancroides	3	6	9					164
Cystitis		2	1				1	58
Gonorrhœa		8	8					109
Nephritis		2		2				17
Orchitis		6	6					52
Renal colic		1	1					33
Urethræ strictura		1	1					6
Diseases of the integumentary system.								
Abcessus		4	4					105
Furunculus	1	24	23				2	153
Impetigo		2	2					106
Sycosis		1	1					16
Ulcus		3	1	2				191
Diseases of the absorbent system.								
Adenitis		3	3					78
Non-malignant tumors and cysts.								
Lupus		1	1					25

DETAILED STATEMENT—Continued.

Diseases.	Remaining from last quarter.	Admitted.	Discharged to duty.	Invalided.		Died.	Continued to next quarter.	Total number of sick-days.
				To hospital.	From service.			
POISONS.								
Alcoholismus acutus.....		3	3					8
Vulnus venenatum.....		1	1					6
VIOLENT DISEASES AND DEATHS.								
Abrasio.....		1	1					9
Ambustio.....		4	4					69
Contusio.....	1	18	19					84
Explosio.....		2	1	1				41
Fractura.....		5	4	1				106
Luxatio.....		2	1				1	36
Stemma.....		5	4	1				70
Vulnus contusum.....		9	8				1	89
Vulnus incisum.....	1	5	6					31
Vulnus laceratum.....		2	2					135
Vulnus punctum.....		2	2					40
Vulnus sclopetarium.....		1	1					35
Total.....	7	250	221	19	2	6	9	3,444

Medical Inspector N. L. Bates, U. S. N., in his report for the first quarter, 1883, remarks :

There occurred during the quarter an unusual number of severe cases of pneumonia, The first case was admitted January 11, at Villefranche, without any special exposure, in a somewhat delicate and broken-down man. As the ship was about to make a long passage at sea to a northern climate, it was deemed advisable to send the man, although convalescing, to the hospital at Villefranche. On the 24th of January three cases of pneumonia, and on the 25th one case, were admitted. Another case followed February 7, and the last for the quarter March 25. All recovered except the last, a colored man, adynamic from the beginning, and it was rapidly fatal from exhaustion. The remaining six cases presented no special features, except that in none of them was there any apparent sufficient exciting cause.

There were two cases of facial erysipelas, occurring in privates in the Marine Corps, temperate and quiet men. No special exciting cause could be assigned in either case.

The following cases of interest are reported by Medical Inspector Bates during the year :

J. M., admitted May 17, with acute rheumatism involving the shoulders, elbows, and wrist joints. The disease was of moderate severity, and he was rapidly progressing to convalescence when acute nephritis set in with entire subsidence of the rheumatic symptoms. The urine diminished to 6 ounces in twenty-four hours and was two-thirds albumen. Oedema of the face and general dropsy followed very quickly, with embarrassed circulation, dyspnoea, and the usual signs of a severe attack of pneumonia of the left lung. After a few days improvement began, and on the 11th of June he was transferred to the British Hospital at Cronstadt. His improvement continued, the oedema, &c., disappeared, the urine was increased to the usual quantity and occasionally exhibited, upon testing, small amounts of albumen. The cough was quite severe, expectoration free, but no pain in lung or heart region and no embarrassment of circulation or respiration. He was returned from the hospital June 17, as the vessel was about to leave. Since his return on board his appetite has failed and his rheumatic pain has returned, but with no swelling of the joints. Traces of albumen are found in the urine, and he is very weak and anæmic. He improved and was discharged July 24.

P. J. L., admitted June 7, with meningitis. On the night of the 6th he suddenly became delirious and violent, requiring restraint, only complaining, however, that his head hurt him. He had not been on shore nor exposed to the sun. No sufficient cause could be assigned, and it was at first believed to be tubercular in character. The next day the violent symptoms disappeared, he was quiet, rational, and did not complain of pain in any locality. His general appearance, a dry, furred, fissured tongue,

a morning temperature of 103° + and an evening temperature 2° lower, gave sufficient evidence of serious illness; there was no eruption and for several days but little change in the general symptoms; the morning temperature was always higher than the evening. He slept badly and occasionally complained of pain in the back of the neck and in the sterno-cleido-mastoid muscles; pulse, 80-85, strong and full; bowels constipated, but easily moved. As the ship was noisy, he was transferred, June 11, to the British Hospital at Cronstadt, and returned June 17 much improved. He was transferred July 1 to the hospital at Copenhagen. For some days before transfer he had complained of more severe pain in the head and back of neck, had slept badly, became irritable, occasional vomiting, but the stomach generally retained food. His temperature ranged from normal to 101° F. He gradually became weaker after his transfer, and he died at the hospital July 12, 1883.

G. V., admitted July 5. He had been on shore on duty with the band the day before and was exposed to the direct rays of a hot sun for some hours. After his return on board he complained of great fatigue and headache. The following morning the headache was still severe, with pains in neck, back, and lower extremities, nausea, and irritability of the stomach; temperature normal. On the 6th, all the symptoms the same, there is no delirium; temperature 101° .1, pulse 90. 7th. The headache and pains in the neck more intense; severe pain in the muscles of the lower extremities; temperature 101° , pulse 100. 8th. The same, with occasional vomiting; there is retention of urine; the urine presents traces of blood and albumen; temperature 100° .1, pulse 100. 9th. Last evening was attacked with tetanic spasms of the muscles of the neck, the first spasm of any severity since his illness, hyperaesthesia of the skin, pupils contracted, retention of urine. This morning is delirious, tongue dry and coated; temperature 101° .1, pulse 104. Much weaker. He was transferred to the hospital at Christiania, Norway, and died there July 10. Autopsy six hours after death. The dura mater was congested, pus was found upon the convexity of the brain, in both lateral ventricles, on the anterior and posterior surfaces of the cord, purulent blood at the base of the brain. The dura mater of the cord was congested.

QUINNEBAUG.

[Third rate; wood; screw; 910 tons; 365 days' service; strength, 216.]

Classification of diseases.	Remaining from last year.	Admitted.	Discharged to duty.	Invalided.		Died.	Remaining at the end of the year.	Total number of sick-days.
				To hospital.	From service.			
Zymotic diseases.....		18	17				1	153
Constitutional diseases.....	2	27	27	1			1	431
Diseases of the nervous system.....		22	22					80
Diseases of the eye.....		7	7					24
Diseases of the ear.....		1	1					4
Diseases of the circulatory system.....		1				1		51
Diseases of the respiratory system.....	1	25	25	1				161
Diseases of the digestive system.....	1	43	43			1		252
Diseases of the genito-urinary system.....		23	23				5	542
Diseases of the integumentary system.....		35	34				1	331
Diseases of the absorbent system.....		9	9				1	143
Poisons.....		9	9					20
Violent diseases and deaths.....	1	58	57				2	444
Total.....	5	283	273	2		2	11	2,686

NOTE.—This vessel was 249 days in port and 116 at sea. The average number of days each case was under treatment was 9.1, and the daily average number of sick was 7.2. The deaths were from disease of the valves of the heart and from chronic diarrhoea.

REPORT OF VACCINATION.

	Successful.	Unsuccessful.
No evidence of previous examination.....	16	28
Presenting good cicatrices.....	43	90
Evidence of former attack of small-pox.....		1

NOTE.—Bovine virus was used in tubes.

142 REPORT OF THE SURGEON-GENERAL OF THE NAVY.

AGE TABLE.

	15 to 25.	25 to 35.	35 to 45.	45 to 55.	Over 55.
Average number on board.....	95	87	23	10	1
Number sick.....	147	101	34	6	

DETAILED STATEMENT.

Diseases.	Remaining from last quarter.	Admitted.	Discharged to duty.	Invalided.		Died.	Continued to next quarter.	Total number of sick days.
				To hospital.	From service.			
GENERAL DISEASES.								
Zymotic diseases.								
Erysipelas.....		1					1	16
Febris continua simplex.....		1	1					3
Febris intermittens.....		9	9					59
Febris remittens.....		4	4					61
Vaccina.....		3	3					14
Constitutional diseases.								
Adynamia.....	1	7	8					46
Hydrops.....		1	1					5
Lumbago.....		6	6					34
Rheumatismus acutus.....		5	5					100
Rheumatismus chronicus.....	1	4	5					184
Syphilis consecutiva.....		1	1					17
Syphilis primitiva.....		3	1	1			1	45
LOCAL DISEASES.								
Diseases of the nervous system.								
Cephalalgia.....		9	9					23
Nausea marina.....		4	4					22
Neuralgia.....		8	8					29
Pleurodynia.....		1	1					3
Diseases of the eye.								
Conjunctivitis.....		6	6					23
Hordeolum.....		1	1					2
Diseases of the ear.								
Otalgia.....		1	1					4
Diseases of the circulatory system.								
Morbi valvularum cordis.....		1				1		51
Diseases of the respiratory system.								
Bronchitis acuta.....		3	3					27
Catarrhus bronchialis.....	1	16	17					73
Catarrhus nasalis.....		2	2					9
Hæmoptysis.....		2	2					24
Phthisis pneumonica chronica.....		1		1				17
Pleuritis.....		1	1					11
Diseases of the digestive system.								
Cholera morbus.....		4	4					20
Colica.....		5	5					10
Constipatio.....		3	3					6
Diarrhœa acuta.....	1	15	16					79
Diarrhœa chronica.....		2	1			1		27
Hæmorrhœis.....		2	2					13
Stomatitis.....		1	1					13
Tonsillitis.....		11	11					80

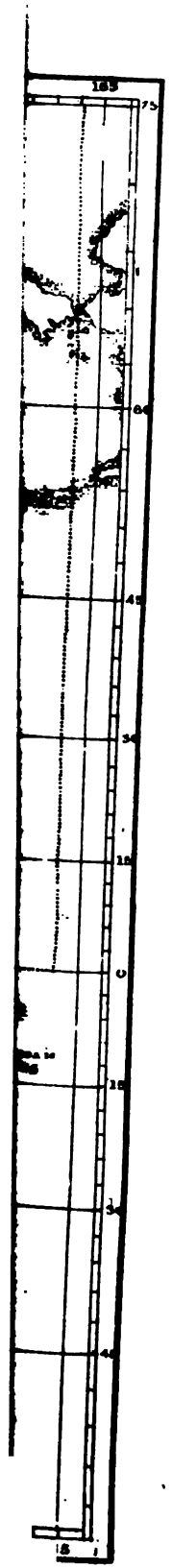
DETAILED STATEMENT—Continued.

Diseases.	Remaining from last quarter.	Admitted.	Discharged to duty.	Invalided.		Died.	Continued to next quarter.	Total number of sick-days.
				To hospital.	From service.			
LOCAL DISEASES—Continued.								
<i>Diseases of the genito-urinary system.</i>								
Balanitis		2	2					91
Chancroides		4	4					77
Cystitis		3	3					25
Gonorrhoea		9	7				2	158
Hæmaturia		2	1				1	20
Hydrocele		1	1					1
Orchitis		6	4				2	151
Prostatitis		1	1					19
<i>Diseases of the integumentary system.</i>								
Abscessus		20	20					189
Eczema		1	1					30
Furunculus		12	11				1	81
Onychia		1	1					12
Ulcus		1	1					19
<i>Diseases of the absorbent system.</i>								
Adenitis		9	8				1	143
POISONS.								
Alcoholismus acutus		9	9					20
VIOLENT DISEASES AND DEATHS.								
Abrasio		5	5					48
Ambustio		3	3					14
Contusio		21	20				1	132
Fractura		1	1					27
Stremma	1	11	11				1	84
Vulnus contusum		12	12					118
Vulnus punctum		1	1					4
Vulnus sclopetarium		4	4					17
Total	5	283	273	2		2	11	2636

Surgeon Joseph Hugg, in his report for the second quarter, 1883, details the following case:

E. G. cabin steward, aged thirty-five, native of France, was admitted to the sick report June 2, with chronic diarrhoea. The disease had its commencement about six weeks previously, soon after the ship had arrived on the west coast of Africa. On the 9th of June a swelling appeared in the left side of the epigastrium, extending from the ribs inward and downward, about 2 inches in length and very tender to the touch and painful to the patient. Cataplasms were applied and the diarrhoeal symptoms treated by the usual methods. The tumor increased in size quite rapidly, the bowel symptoms not being ameliorated. The strength of the patient began to fail, and he emaciated quite rapidly. There was no stomachal nausea or vomiting, and there was marked febrile movement. He died after midnight of June 25. The examination after death revealed a large abscess of the left lobe of the liver.

SANITARY CONDITION
OF THE
ASIATIC STATION.



THE ASIATIC SQUADRON.

The vessels employed upon this station were the Richmond (flag-ship), Juniata, Essex, Enterprise, Monocacy, and Palos.

The total force employed was 1,149 for the year.

The loss of strength of the total force was: From invaliding, 72, or at the rate of 62+ per 1,000; from deaths, 6, or at the rate of 5+ per 1,000.

The loss of effective force represented by the number of cases treated was 1,417, with 12,519 sick-days, giving an average of 8+ days for each case, with a daily average number of sick of 34+.

The admissions for treatment per 1,000 of mean strength was at the rate of 1,233+, and the following table presents the ratio per 1,000 for each class of diseases:

Total force.....	1,149
Admissions per 1,000.....	1,233+
Zymotic diseases.....	198
Constitutional diseases.....	131
Diseases of the nervous system.....	50
Diseases of the eye.....	13
Diseases of the ear.....	11
Diseases of the teeth.....	3
Diseases of the circulatory system.....	8
Diseases of the respiratory system.....	60
Diseases of the digestive system.....	250
Diseases of the genito-urinary system.....	105
Diseases of the locomotive system.....	10
Diseases of the integumentary system.....	152
Diseases of the absorbent system.....	10
Poisons.....	28
Violent diseases and deaths.....	198

SUMMARY OF ASIATIC STATION.

[Strength, 1,149.]

Classification of diseases.	Remaining from last year.	Admitted.	Discharged to duty.	Invalided.		Died.	Remaining at the end of the year.	Total number of sick-days.
				To hospital.	From service.			
Zymotic diseases.....	2	214	201	10	1	1	4	1,399
Constitutional diseases.....	5	146	133	14	1	3	3	1,435
Diseases of the nervous system.....		58	49	7	1		1	447
Diseases of the eye.....		16	15	1				303
Diseases of the ear.....		13	11	2				107
Diseases of the teeth.....		4	4					10
Diseases of the circulatory system.....		10	4			2		104
Diseases of the respiratory system.....	5	68	62	5	2		1	461
Diseases of the digestive system.....	25	286	270	12			6	1,433
Diseases of the genito-urinary system.....	6	115	108	2			11	1,740
Diseases of the locomotive system.....	1	11	10	1			1	191
Diseases of the integumentary system.....	3	172	171	1		1	2	1,781
Diseases of the absorbent system.....	3	19	19	1			2	888
Poisons.....	1	32	213	1				133
Violent diseases and deaths.....	5	223	213	7		2	6	2,087
Total.....	30	1,387	1,302	68	4	6	37	12,519

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REPORT OF VACCINATION.

	Success- ful.	Unsuc- cessful.
Presenting good cicatrices.....		6

AGE TABLE.

	15 to 25.	25 to 35.	35 to 45.	45 to 55.	Over 55.
Average number on board.....	488	423	177	47	14
Number sick.....	591	502	232	69	24

DETAILED STATEMENT.

Diseases.	Remaining from last quarter.	Admitted.	Discharged to duty.	Invalided.		Lied.	Continued to next quarter.	Total number of sick- days.
			To hospital.	From service.				
GENERAL DISEASES.								
Zymotic diseases.								
Dengue.....		70	70					422
Erysipelas.....		1		1				8
Febricula.....		15	15					48
Febris continua simplex.....	1	23	24					102
Febris enterica.....	1	3		2		1	1	108
Febris intermittens.....		63	60	3				276
Febris remittens.....		38	31	4			3	432
Parotitis.....		1	1					8
Constitutional diseases.								
Adynamia.....		16	15	1				79
Anæmia.....		2	2					8
Lumbago.....	1	19	19	1				125
Podagra.....		1	1					6
Rheumatismus acutus.....		16	15	1				145
Rheumatismus chronicus.....	2	20	31	1				249
Rheumatismus gonorrhœicus.....		2	1				1	70
Senectus.....		2	2					56
Syphilis consecutiva.....	1	45	33	10	1		2	481
Syphilis primitiva.....	1	13	14					216
LOCAL DISEASES.								
Diseases of the nervous system.								
Apoplexia.....		1	1					4
Cephalalgia.....		8	8					123
Convulsio.....		4	4					8
Dementia.....		1		1				3
Epilepsia.....		4	3	1				16
Incoëlatio.....		1	1					3
Locomotor ataxia.....		1		1				1
Mania.....		2	1	1				37
Melancholia.....		1	1					3
Nausea marina.....		2	2					3
Neuralgia.....		16	14	1			1	114
Paralysis.....		2		1	1			14
Pleurodynia.....		10	10					43
Sciatica.....		1		1				16
Vertigo.....		4	4					60
Diseases of the eye.								
Conjunctivitis.....		11	10	1				193
Hordeolum.....		1	1					13
Iritis.....		4	4					99
Diseases of the ear.								
Otalgia.....		1	1					3
Otitis.....		3	3					40
Otorrhœa.....		7	6	1				62
Surditas.....		2	1	1				3

DETAILED STATEMENT—Continued.

Diseases.	Remaining from last quarter.	Admitted.	Discharged to duty.	Invalided.		Died.	Continued to next quarter.	Total number of sick-days.
				To hospital.	From service.			
LOCAL DISEASES—Continued.								
<i>Diseases of the teeth.</i>								
Odontalgia.....		4	4					10
<i>Diseases of the circulatory system.</i>								
Aneurysm.....		2		1		1		7
Morbi valvularum cordis.....		1				1		2
Palpitation.....		6	3	3				42
Varix.....		1	1					52
<i>Diseases of the respiratory system.</i>								
Bronchitis acuta.....	1	17	18					110
Bronchitis chronica.....		4	3	1				24
Catarrhus bronchialis.....	1	32	30	2			1	164
Catarrhus nasalis.....		1	1					1
Hæmoptysis.....		3	2		1			16
Laryngitis.....		3	3					27
Phthisis pneumonica acuta.....		1		1				13
Phthisis pneumonica chronica.....		3	2		1			38
Pleuritis.....		3	3					51
Pneumonia.....		1		1				17
<i>Diseases of the digestive system.</i>								
Cholera morbus.....		6	6					11
Colica.....	1	20	21					61
Congestio hepatis.....		1	1					23
Constipatio.....		1	1					1
Diarrhoea acuta.....	1	148	141	5			3	669
Diarrhoea chronica.....		9	5	4				82
Dysenteria acuta.....		14	14					121
Dyspepsia.....		7	6				1	43
Fistula ischio rectal.....		1	1					47
Gastritis.....		3	3					6
Gastrodynia.....		2	2	1				9
Hæmorrhoids.....		10	7	1			2	67
Hernia.....		6	5					38
Icterus.....		5	5					62
Stomatitis.....		1	1					3
Tonsillitis.....		48	48					171
Typhlitis.....		1						10
Vermes.....		3	3	1				9
<i>Diseases of the genito-urinary system.</i>								
Albuminuria.....		1	1					1
Chancroides.....	4	33	32				5	821
Cystitis.....		3	2				1	49
Colica nephritica.....		1	1					2
Enuresis.....		1	1					2
Gonorrhoea.....	1	52	49	1			3	557
Orethritis.....		16	15				1	208
Phymosis.....		1	1					29
Urethra strictura.....		6	4	1			1	58
Varicocele.....	1	1	2					13
<i>Diseases of the locomotive system.</i>								
Arthritis.....		2	2					28
Necrosis.....		1	1					6
Periostitis.....		3	2				1	59
Synovitis.....	1	5	5	1				98
<i>Diseases of the integumentary system.</i>								
Abscessus.....	2	54	53	1		1	1	808
Anthrax.....		3	3					14
Eczema.....		9	9					60
Erythema.....		1	1					4
Furunculæ.....		56	55				1	315
Herpes.....		2	2					26
Lichen.....		2	3					

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DETAILED STATEMENT—Continued.

Diseases.	Remaining from last quarter.	Admitted.	Discharged to duty.	Invalided.		Died.	Continued to next quarter.	Total number of sick-days.
				To hospital.	From service.			
LOCAL DISEASES—Continued.								
<i>Diseases of the integumentary system—Cont'd.</i>								
Paronychia		8	8					50
Scabies		1	1					4
Ulcus	1	26	27					448
Unguis involutus		2	2					12
Urticaria		7	7					22
<i>Diseases of the absorbent system.</i>								
Adenitis	3	19	19	1			2	888
POISONS.								
Alcoholismus acutus	1	29	30					100
Alcoholismus chronicus		2	2					12
Delirium tremens		1		1				21
VIOLENT DISEASES AND DEATHS.								
Abrasio		15	15					144
Ambustio		5	5					20
Concusio cerebri		1		1				10
Contusio	2	60	61	1				485
Fractura		8	3	4		1		124
Luxatio		2	1				1	20
Stremma	1	61	59				3	579
Vulnus contusum		16	15				1	114
Vulnus incisum		27	27					236
Vulnus laceratum	2	18	19				1	281
Vulnus punctum		8	8					62
Vulnus sclopetarium		2		1		1		12
Total	30	1,387	1,302	68	4	6	37	12,519

RICHMOND.

[Second rate; wood; screw; tons, 1,525; service, 865 days; strength, 841.]

Classification of diseases.	Remaining from last year.	Admitted.	Discharged to duty.	Invalided.		Died.	Remaining at the end of the year.	Total number of sick-days.
				To hospital.	From service.			
Zymotic diseases		52	48	3			1	372
Constitutional diseases	4	50	47	6			1	384
Diseases of the nervous system		9	8				1	90
Diseases of the eye		6	6					157
Diseases of the ear		3	3					39
Diseases of the teeth		2	2					2
Diseases of the circulatory system		1				1		1
Diseases of the respiratory system	1	5	4	2				57
Diseases of the digestive system	2	119	111	9			1	666
Diseases of the genito-urinary system	2	33	31				4	687
Diseases of the locomotive system		5	4	1				91
Diseases of the integumentary system	1	54	52	1		1	1	461
Diseases of the absorbent system	2	1	3					196
Poisons		13	12	1				57
Violent diseases and deaths	2	65	60	3		2	2	438
Total	14	418	391	26		4	11	2,698

NOTE.—This vessel was 231 days in port and 34 at sea. The deaths were 1 from aneurysm, 1 from fracture of the cranium, 1 from abscess of the brain, and 1 from gunshot wound. The average number of days each case was under treatment was 8.5, and the daily average number of sick, 10.1.

AGE TABLE.

	15 to 25.	25 to 35.	35 to 45.	45 to 55.	Over 55.
Average number on board	138	134	48	16	5
Number of sick.....	164	171	65	22	10

DETAILED STATEMENT.

Diseases.	Remaining from last quarter.	Admitted.	Discharged to duty.	Invalided.		Died.	Continued to next quarter.	Total number of sick-days.
				To hospital.	From service.			
GENERAL DISEASES.								
Zymotic diseases.								
Erysipelas.....		1		1				3
Febricula.....		8	8					27
Febris enterica.....		1		1				6
Febris intermittens.....		16	16					56
Febris remittens.....		26	24	1			1	280
Constitutional diseases.								
Adynamia.....		4	4					17
Lumbago.....	1	11	11	1				43
Rheumatismus acutus.....		3	3					59
Rheumatismus chronicus.....	1	8	9					40
Syphilis consecutiva.....	1	19	14	5			1	126
Syphilis primitiva.....	1	5	6					99
LOCAL DISEASES.								
Diseases of the nervous system.								
Apoplexia.....		1	1					4
Mania.....		1	1					32
Neuralgia.....		5	4				1	42
Pleurodynia.....		2	2					12
Diseases of the eye.								
Conjunctivitis.....		4	4					94
Iritis.....		2	2					63
Diseases of the ear.								
Otitis.....		2	2					32
Otorrhœa.....		1	1					7
Diseases of the teeth.								
Odontalgia.....		2	2					2
Diseases of the circulatory system.								
Aneurysma.....		1				1		1
Diseases of the respiratory system.								
Bronchitis acuta.....	1	1	2					21
Catarrhus bronchialis.....		1	1					3
Laryngitis.....		1	1					3
Phthisis pneumonica acuta.....		1		1				13
Pneumonia.....		1		1				17
Diseases of the digestive system.								
Cholera morbus.....		2	2					6
Colica.....	1	11	12					33
Diarrhœa acuta.....	1	76	72	5				417
Diarrhœa chronica.....		7	8	4				27
Dysenteria acuta.....		1	1					8
Dyspepsia.....		3	3					10

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DETAILED STATEMENT—Continued.

Diseases.	Remaining from last quarter.	Admitted.	Discharged to duty.	Invalided.		Died.	Continued to next quarter.	Total number of sick-days.
			To hospital.	From service.				
LOCAL DISEASES—Continued.								
<i>Diseases of the digestive organs—Continued.</i>								
Fistula ischio rectal.		1	1					47
Hæmorrhoids		3	2				1	17
Hernia		3	3					35
Icterus		1	1					13
Tonsillitis		9	9					47
Vermes		2	2					6
<i>Diseases of the genito-urinary system.</i>								
Chancroides	1	12	11				2	371
Colica nephritica		1	1				1	3
Cystitis		1						2
Enuresis		1	1					170
Gonorrhœa	1	9	10				1	106
Orchitis		6	5					13
Urethra strictura		2	2					9
Varicocele		1	1					12
<i>Diseases of the locomotive system.</i>								
Synovitis		5	4	1				91
<i>Diseases of the integumentary system.</i>								
Abscessus	1	13	12	1		1		185
Anthrax		1	1					7
Eczema		2	2					10
Furunculus		23	22				1	167
Paronychia		4	4					5
Scabies		1	1					4
Ulcus		7	7					65
Unguis involutus		1	1					6
Urticaria		2	2					3
<i>Diseases of the absorbent system.</i>								
Adenitis	2	1	3					196
POISONS.								
Alcoholismus acutus.		12	12					26
Delirium tremens		1		1				21
VIOLENT DISEASES AND DEATHS.								
Abrasio		5	5					43
Concussio cerebri		1		1				10
Contusio	1	18	19					84
Fractura		3		2		1		9
Strumma		16	16					95
Vulnus contusum		3	2				1	12
Vulnus incisum		8	8					53
Vulnus laceratum	1	9	9				1	159
Vulnus punctum		1	1					5
Vulnus sclopetarium		1				1		1

Surgeon A. S. Oberly, in his report, narrates the following :

C. R., first-class fireman, aged thirty-six years and eight months, native of Ireland, entered at New York November 30, 1880, reported at the sick bay February 13, 1883, complaining of cough, with spitting of blood, and pain beneath the left shoulder blade. At this time he was carefully examined, and as nothing could be detected and his trouble did not seem to annoy him he was prescribed for and requested to return the next morning. During the afternoon of the 13th he returned and reported himself suffering from an acute pain beneath the left scapula, for which he was ordered rest, and given a hypodermic injection of morphia, which gave relief. On the morning of

the 24th he reported himself at sick-call feeling decidedly better. Another physical examination was made, but with negative results. Shortly after leaving the sick bay he returned and reported that he was spitting blood and wished to show its character. As there was considerable cough he was requested to sit down, when immediately the blood came freely from his mouth, and in a couple of minutes the patient fainted and died. A post-mortem was made six hours after death, which revealed a small thoracic aneurism, affecting the descending portion of the aortic arch, situated on the posterior and outer part of the vessel. There was a rupture with slightly ragged edges, and in the immediate neighborhood of the aneurism (the sac of which was practically obliterated by the rupture) the aorta was atheromatous. There were no other morbid appearances to account for death. There is no antecedent history of syphilis.

The following case of abscess of the brain is reported :

C. S., seaman, aged sixty-four years, native of Ireland, admitted November 7, 1883, for the treatment of a fluctuating tumor in the right parietal and temporal regions. He stated that he had been in excellent health until lately, when he began to suffer from headache and earache, but not to such a degree as to compel him to apply for treatment. His general appearance is good, and there is no appearance of any specific or general trouble. On the morning of his admission he came to have his earache treated, and it was then noticed for the first time that a small fluctuating tumor existed in front of the right ear. This was opened and gave exit to an ounce and a half of creamy pus and was followed with complete amelioration of all his pains. Examination by a probe revealed extensive undermining of the scalp toward the crown of the head, but no necrosis was detected. From this time to November 13 the patient was quite comfortable and exhibited no signs of cerebral trouble. On the morning of the 13th he complained of headache and earache, and as the discharge of pus had nearly ceased, another deep and free incision was made, that gave exit to about three ounces of pus, with relief to all pain. On the night of November 14 S. fell out of his hammock and struck the top of his head. In the morning a slight œdema began to show itself on the lower right eyelid and upper part of the cheek, and it was then observed that he was becoming slightly stupid and heavy and not as strong as usual; he was cheerful, responded readily to questions, and insisted upon being allowed to wait upon himself. On the morning of November 15, however, the patient was duller in intellect and weaker than the day before, requiring the aid of a nurse in his movements. He conversed freely with his messmates, exhibited no signs of paralysis of motion or sensation nor any marked signs of brain trouble. Pus discharged freely from the incision and no special pain was remarked. This state continued much the same until early on the morning of November 16 (nine days after admission), when a quiet but profound coma set in resembling natural sleep, and in which condition he died 1.55 p. m. of that day. An autopsy, made three hours after death, found the body still warm, well nourished with puffiness of the scalp, cheek, and eyelid on the right side. On turning back the scalp much serum oozed out; the squamous portion of the right temporal bone was denuded of periosteum for some extent, as well as the zygoma and base of the mastoid process. The parts were freely bathed in pus, but there was no marked disease of the mastoid cells. On removing the skull cap the dura mater and bones were found normal in appearance. The convolutions had a normal appearance also, but the middle right lobe of the cerebrum was somewhat flattened and fluctuated on pressure. On examining the brain substance three separate abscesses filled with pus were found to occupy this region. One as large as a turkey's egg, lined with a membrane, the second as large as a pigeon's egg, and the third about the size of a walnut. The cerebellar lobes, pons, &c., were covered with lymph. There were no evidences of any constitutional or specific disease to account for the necrosis or abscesses.

Commenting upon the large number of sick during the second quarter, Surgeon Oberly writes:

The large number of sick during the second quarter, 1883, attributed to climatic causes, is accounted for by the prolonged stay of the Richmond in the harbor of Hong-Kong at a time when fevers and gastro-intestinal troubles were very common. During the quarter nearly every one on board ship has been ill with more or less fever, or has suffered from some bowel complaint, and the health and strength of the officers and men have been thereby greatly impaired. The milder cases of sickness do not appear on the records save as having been prescribed for, though their general adynamic condition, in common with those regularly admitted, is very much the same. Since the Richmond left Panama with the present crew she has been mostly in hot weather or has cruised in the tropics, and with last summer's quarantine at Yokohama the crew has hardly had a fair chance to recruit strength or physique; and, combined with the Hong-Kong affliction, it will take months before they will be efficient men-of-war's men on the score of health or strength.

154 REPORT OF THE SURGEON-GENERAL OF THE NAVY.

JUNIATA.

[Third rate; screw; wood; 828 tons; service, 365 days; strength, 237.]

Classification of diseases.	Remaining from last year.	Admitted.	Discharged to duty.	Invalided.		Died.	Remaining at the end of the year.	Total number of sick-days.
				To hospital.	From service.			
Zymotic diseases	2	78	78	1			1	502
Constitutional diseases		18	18					135
Diseases of the nervous system		30	18	1	1			172
Diseases of the eye		2	2					36
Diseases of the ear		3	3					7
Diseases of the teeth		1	1					4
Diseases of the circulatory system		1	1					52
Diseases of the respiratory system		6	6					37
Diseases of the digestive system		43	43					212
Diseases of the genito-urinary system	1	32	27				6	452
Diseases of the integumentary system	1	51	51				1	855
Diseases of the absorbent system		7	6				1	354
Poisons		3	3					13
Violent diseases and deaths		38	36				2	676
Total	4	303	293	2	1		11	3,507

NOTE.—This vessel was 252 days in port, 113 days at sea *en route* to the Asiatic Station. The average number of days each case was under treatment was 11.4, and the daily average number of sick was 9.5.

REPORT OF VACCINATION.

	Successful.	Unsuccessful.
Presenting good cicatrices		6

AGE TABLE.

	15 to 25.	25 to 35.	35 to 45.	45 to 55.	Over 55.
Average number on board	134	58	33	9	3
Number sick	147	91	41	21	7

DETAILED STATEMENT.

Diseases.	Remaining from last quarter.	Admitted.	Discharged to duty.	Invalided.		Died.	Continued to next quarter.	Total number of sick-days.
				To hospital.	From service.			
GENERAL DISEASES.								
Zymotic diseases.								
Denguis		50	50					273
Febricula		4	4					15
Febris continua simplex	1	18	19					88
Febris enterica	1	1		1			1	88
Febris intermittens		3	3					19
Febris remittens		1	1					11
Parotitis		1	1					

DETAILED STATEMENT—Continued.

Diseases.	Remaining from last quarter.	Admitted.	Discharged to duty.	Invalided.		Died.	Continued to next quarter.	Total number of sick days.
				To hospital.	From service.			
GENERAL DISEASES—Continued.								
Constitutional diseases.								
Adynamia		3	3					16
Anæmia		1	1					4
Rheumatismus chronicus		10	10					50
Senectus		2	2					56
Syphilis consecutiva		2	2					9
LOCAL DISEASES.								
Diseases of the nervous system.								
Cephalalgia		4	4					113
Convulsio		4	4					8
Epilepsia		3	3					8
Neuralgia		2	2					8
Paralysis		2		1	1			4
Pleurodynia		5	5					14
Diseases of the eye.								
Iritis		2	2					25
Diseases of the ear.								
Otalgia		1	2					36
Otorrhœa		2	2					2
Diseases of the teeth.								
Odontalgia		1	1					5
Diseases of the circulatory system.								
Varix		1	1					4
Diseases of the respiratory system.								
Bronchitis acuta		4	4					52
Catarrhus bronchialis		2	2					
Diseases of the digestive system.								
Colica		1	1					28
Diarrhœa acuta		21	21					9
Diarrhœa chronica		2	2					
Gastritis		3	3					7
Tonsillitis		15	15					86
Vermes		1	1					55
Diseases of the genito-urinary system.								
Chancroides		14	12				2	55
Cystitis		1	1					3
Gonorrhœa		15	12					13
Orethritis		1	1					1
Urethræ strictura		1					1	28
Varicocele	1		1					4
Diseases of the integumentary system.								
Abcessus	1	23	23				1	513
Anthrax		1	1					6
Eczema		4	4					22
Furunculus		6	6					28
Lichen		3	3					18
Ulcus		9	9					248
Urticaria		5	5					20
Diseases of the absorbent system.								
Adenitis		7	6				1	354
POISONS.								
Alcoholismus acutus		1	1					2
Alcoholismus chronicus		2	2					12

DETAILED STATEMENT—Continued.

Diseases.	Remaining from last quarter.	Admitted.	Discharged to duty.	Invalided.		Died.	Continued to next quarter.	Total number of sick-days.
				To hospital.	From service.			
VIOLENT DISEASES AND DEATHS.								
Abrasio		5	5					38
Contusio		11	11					142
Fractura		1	1					35
Luxatio		1					1	4
Strenua		10	9				1	290
Vulnus incisum		6	6					55
Vulnus laceratum		3	3					105
Vulnus punctum		1	1					7
Total	4	303	293	2	1	.....	11	3,507

Surgeon George W. Woods, U. S. N., reports the following case in his report for the first quarter 1883:

G. D., U. S. N., aged forty-five, native of Vermont. On the sick-list from December 12, 1882, to January 31, 1883, as with enteric fever, when he was transferred to the Royal Naval Hospital at Malta. The following is an abstract of the hospital ticket. Origin: There is good evidence that the disease originated in line of duty. The patient was admitted to the list December 1, 1882, with enteric fever, which had its origin in exposure to sewer-gas from defective drainage at the United States navy-yard, New York, whilst the Juniata was fitting out in October, 1882. Disease apparently ran its course, and about December 28 the patient was considered convalescent. Subsequently a febrile action was set up which has continued up to the present time, and is considered to be either an abnormal continuance of the fever beyond its usual limits, or a pyæmic fever with the formation of an hepatic or lumbar abscess. No lesion of the viscera has been determined, and up to the present time the patient's digestion has been excellent, with clean tongue for a long period. Heart, lungs, and kidneys are perfectly sound functionally, and the hepatic functions apparently well performed until the last few days. A lumbar pain and tenderness along the right costal border about four inches from the spinal column has at times been complained of, and again entirely absent. This pain has extended downward over the quadratus muscle to the crest of the ilium, and has been coincident with muscular rheumatism of the thighs. This pain is all that patient has complained of for some weeks, and he has both eaten and slept well. The patient, previous to being attacked, was subject to bilious troubles, and had occasional attacks of fever. He had for years been dwelling in a malarial country (Washington, D. C.), and been compelled to take hepatic stimulants, quinine, &c. His liver has always been his "weak point," according to his own statement, and has required constant stimulation. Average morning temperature, at present, 99° 5; evening temperature, 101° 5. The treatment has been entirely quinine, tonics, febrifuge drinks, occasional doses of podophyllin and stimulants, milk punches, and nutritious broths. Sulphate of quinine in large abortive doses during the morning remissions, and at other times fifteen grains have been given during the day in divided doses. Warburg's tincture has also been given, but only a trivial impression has been made in the pyrexia. Full diet has been allowed morning and noon, and a light supper when digestion was good. The patient was transferred to the hospital for rest and quiet, which cannot be obtained on board ship, and also for more favorable hygienic surroundings and treatment.

On the 26th of February the patient was surveyed, the board of survey recommending that he remain at the Royal Naval Hospital for further treatment.

The following is the entry in the journal of the Juniata at that date when official cognizance of the case ceased:

Was admitted to the hospital January 31, 1883. On this day it was decided, in consultation with Dr. Dick, R. N., that there was no evidence of abscess beyond the circumscribed tenderness and slight swelling already noted, and aspiration as a diagnostic measure was not warranted, as there was no other symptoms pointing to any local lesion, and especially not to the liver. On this day he had fair strength, and was able to walk to the steam launch which conveyed him to the hospital. The more favorable hygienic surroundings caused a fall in the temperature at once, and on the morning of February 2 the morning reading was normal. Debility, however, increased, and

patient's countenance had somewhat of a cachectic expression. On the 5th the swelling of tender spot below margin of ribs suddenly increased, extending posteriorly, and fluctuation was apparent. Pontices were at once applied. On the 8th the swelling was aspirated, and ten ounces of grumous pus, with a faecal odor, were removed. Six ounces were removed on the succeeding day, and on the 9th a drainage tube was inserted. The morning temperature was now permanently normal up to the 19th; the evening record being about 99° F. Pulse, however, remained very quick and feeble, averaging 120; strength did not increase, though patient was taking abundant nutriment. The discharge from the abscess gradually decreased, lost its faecal odor, and on the 25th was scarcely discharging more than a few drops of laudable pus, and rapidly closing. Probing and microscopical examinations of the first discharges showed the abscess to be hepatic and situated at the outer extremity of the anterior border of the liver. Although the abscess has nearly closed there has been no corresponding improvement in the patient's general condition. The pulse has been weak, there have been night sweats, and on several occasions distinct rigors followed by sweating and fever during the last ten days. This condition was discussed as to whether it was an indication of purulent formation and accumulation within the liver, or whether it might not be an intermittent attack. After the profused rigors of Friday and Saturday followed by fever, with a temperature of 104° F., and pulse between 130 and 140, quin. sulph. was given in large doses to anticipate the chill of yesterday, but it only had the effect of delaying it to a later period of the day (yesterday), when it came on with the usual severity. This morning the patient is reported to be very feeble, with, for the first time, general tenderness over the liver and a perceptible enlargement of its area. There is also some swelling of the stomach and abdomen with tympanitis. The morning temperature for the last two days has been subnormal (98° F.). There is bilious vomiting, constipation, and general impairment of digestion. Enemata are daily necessary, bringing away large masses of scybala. His diet is principally milk.

Surgeon Woods, in his report for the third quarter, reports as follows:

Dengue.—The fifty cases of dengue fever reported had their origin in an epidemic influence to which the ship was exposed at Calcutta in the latter part of July, and subsequently was kept up by local infection. Cases continued to constantly appear during the quarter, the disease losing its force and some of its peculiar characteristics toward the latter period of the epidemic. Few peculiarities have been presented by the disease. The pain has been perhaps more localized to the lumbar region than is usually the case, and there has been less conjunctivitis during the relapse than usual. Some cases have exhibited cutis anserina, which has been singularly persistent, and in others there has been a peculiar dryness of the mouth and fauces, and a sensation as though it embraced the esophagus and stomach both in a state of rigid contraction, accompanied by a peculiarly disagreeable saccharine taste constantly present. In all cases there was prolonged debility forcing the convalescence, requiring long courses of ferruginous tonics, and especially nutritious diet with stimulants.

ESSEX.

[Third rate; wood; screw; 615 tons; service, 265 days; strength, 175.]

Classification of diseases.	Remaining from last year.	Admitted.	Discharged to duty.	Invalided.			Remaining at the end of the year.	Total number of sick days.
				To hospital.	From service.	Died.		
Zymotic diseases.....	.....	3	3	.....	.....	.....	.....	39
Constitutional diseases.....	.....	19	15	3	.....	.....	1	290
Diseases of the nervous system.....	.....	9	7	2	.....	.....	.....	53
Diseases of the ear.....	.....	3	2	1	.....	.....	.....	11
Diseases of the circulatory system.....	.....	2	.....	2	.....	.....	.....	12
Diseases of the respiratory system.....	1	9	6	2	1	.....	1	116
Diseases of the digestive system.....	.....	11	11	.....	.....	.....	.....	37
Diseases of the genito-urinary system.....	2	13	13	1	.....	.....	1	147
Diseases of the locomotive system.....	1	1	2	.....	.....	.....	.....	13
Diseases of the integumentary system.....	.....	13	13	.....	.....	.....	.....	92
Diseases of the absorbent system.....	1	1	2	.....	.....	.....	.....	38
Poisons.....	.....	1	5	.....	.....	.....	.....	35
Violent diseases and deaths.....	2	34	35	1	.....	.....	.....	358
Total.....	8	123	115	12	1	.....	3	1,241

NOTE.—This vessel was in the Pacific en route to the Asiatic station, and was at sea 92 and in port 273 days. The average number of days each case was under treatment was 9.47 days, and the daily average number of sick was 2.4.

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AGE TABLE.

	15 to 25.	25 to 35.	35 to 45.	45 to 55.	Over 55.
Average number on board	65	76	24	7	3
Number sick	53	50	18	7	3

DETAILED STATEMENT.

Diseases.	Remaining from last quarter.	Admitted.	Discharged to duty.	Invalided.		Died.	Continued to next quarter.	Total number of sick-days.
				To hospital.	From service.			
GENERAL DISEASES.								
<i>Zymotic diseases.</i>								
Febricula		1	1					3
Febris remittens		2	2					36
<i>Constitutional diseases.</i>								
Adynamia		2	2					6
Podagra		1	1					6
Rheumatismus acutus		4	3	1				32
Rheumatismus chronicus		2	2					11
Rheumatismus gonorrhoeicus		2	1				1	70
Syphilis consecutiva		8	6	2				165
LOCAL DISEASES.								
<i>Diseases of the nervous system.</i>								
Cephalalgia		3	3					8
Dementia		1		1				3
Epilepsia		1		1				8
Insolatio		1	1					3
Neuralgia		1	1					2
Pleurodynia		1	1					3
Vertigo		1	1					26
<i>Diseases of the ear.</i>								
Otitis		1	1					8
Surditas		2	1	1				3
<i>Diseases of the circulatory system.</i>								
Palpitatio		2		2				12
<i>Diseases of the respiratory system.</i>								
Catarrhus bronchialis	1	5	3	2			1	57
Hæmoptysis		2	1		1			13
Pleuritis		2	2					46
<i>Diseases of the digestive system.</i>								
Colica		2	2					2
Diarrhoea acuta		2	2					9
Dysenteria acuta		1	1					2
Hæmorrhoids		1	1					13
Hernia		2	2					2
Icterus		1	1					4
Tonsillitis		2	2					5
<i>Diseases of the genito-urinary system.</i>								
Chancroides	2	3	4				1	79
Gonorrhoea		8	8					58
Orchitis		1	1					2
Urethra strictura		1		1				7

DETAILED STATEMENT—Continued.

Diseases.	Remaining from last quarter.	Admitted.	Discharged to duty.	Invalided.		Died.	Continued to next quarter.	Total number of sick days.
				To hospital.	From service.			
LOCAL DISEASES—Continued.								
<i>Diseases of the locomotive system.</i>								
Necrosis		1	1					6
Synovitis	1		1					7
<i>Diseases of the integumentary system.</i>								
Abcessus		1	1					3
Eczema		2	2					17
Furunculus		7	7					33
Paronychia		1	1					2
Ulcus		2	2					37
<i>Diseases of the absorbent system.</i>								
Adenitis	1	1	2					38
POISONS.								
Alcoholismus acutus	1	5	6					35
VIOLENT DISEASES AND DEATHS.								
Abrasio		2	2					40
Ambustio		2	2					6
Contusio	1	12	12	1				155
Luxatio		1	1					16
Stromma		5	5					19
Vulnus contusum		4	4					31
Vulnus incisum		5	5					76
Vulnus laceratum	1	2	3					12
Vulnus punctum		1	1					3
Total	8	123	115	12	1	.....	8	1,241

Surgeon M. L. Ruth reports that during the stay of the vessel at Callao, Peru, during the epidemic of yellow fever at that port in the first quarter of 1883 the vessel was thoroughly disinfected and a close quarantine of the officers and crew was maintained and that no cases of fever occurred on board. No officer was permitted to remain on shore after sundown.

The following cases of interest are reported:

I. C., ordinary seaman (naval apprentice), aged 19, native of Pennsylvania. Enlisted at Washington, D. C., March 13, 1880. Was admitted to the sick report May 15, 1883, and discharged May 16, 1883. Deafness of both ears came on suddenly and without any assignable cause. There is no history of any hereditary tendency. The deafness is persistent after 50 days' treatment and a watch cannot be heard when held between the teeth. Is doing deck duty by imitation.

T. McL., second-class fireman, aged 30, native of Ireland. Enlisted at Yokohama, Japan, August 22, 1883. Whilst on shore on liberty at Yokohama between the 6th and 8th October, 1883, became "drunk and disorderly," and during an altercation with the police he was either struck by them or in falling injured himself. There was a trivial injury to the scalp, so slight as not to require his admission to the sick report. On the 22d of October he developed symptoms of insanity with a tendency to suicide. On the night of October 25, he attempted suicide by drowning. He was transferred by medical survey to the naval hospital, Yokohama, October 26, 1883.

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ENTERPRISE.

[Third rate; wood; screw; 615 tons; strength, 191; service, 365 days.]

Classification of diseases.	Remaining from last year.	Admitted.	Discharged to duty.	Invalided.		Died.	Remaining at the end of the year.	Total number of sick-days.
				To hospital.	From service.			
Zymotic diseases.....		64	58	4		1	1	378
Constitutional diseases.....		23	21	2				232
Diseases of the nervous system.....		11	10	1				100
Diseases of the eye.....		7	6	1				108
Diseases of the ear.....		4	3	1				50
Diseases of the circulatory system.....		2	1			1		12
Diseases of the respiratory system.....		33	32	1				191
Diseases of the digestive system.....		54	49				5	205
Diseases of the genito-urinary system.....		22	21	1				231
Diseases of the locomotive system.....		3	2				1	59
Diseases of the integumentary system.....	1	32	33					184
Poisons.....		7	7					13
Violent diseases and deaths.....		42	40				2	279
Total.....	1	304	283	11		2	9	2,042

NOTE.—This vessel was *en route* to the Asiatic Station, and was 176 days in port and 189 at sea. The average number of days each case was under treatment was 6.69, and the daily average number of sick was 5.60. The deaths were one each from enteric fever and disease of the valves of the heart.

REPORT OF VACCINATION.

	Successful.	Unsuccessful.
No evidence of previous examination.....	0	2
Presenting good cicatrices.....	0	11
Evidence of former attack of small-pox.....	0	1

AGE TABLE.

	15 to 25.	25 to 35.	35 to 45.	45 to 55.	Over 55.
Average number on board.....	94	51	85	10	1
Number sick.....	162	82	60	9	2

DETAILED STATEMENT.

Diseases.	Remaining from last quarter.	Admitted.	Discharged to duty.	Invalided.		Died.	Continued to next quarter.	Total number of sick-days.
				To hospital.	From service.			
GENERAL DISEASES.								
<i>Zymotic diseases.</i>								
Dengnia		20	20					149
Febris continua simplex		5	5					14
Febris enterica		1					1	14
Febris intermittens		36	33	3				174
Febris remittens		2		1			1	27

DETAILED STATEMENT—Continued.

Diseases.	Remaining from last quarter.	Admitted.	Discharged to duty.	Invalided.		Died.	Continued to next quarter.	Total number of sick-days.
			To hospital.	From service.				
GENERAL DISEASES—Continued.								
Constitutional diseases.								
Adynamia		3	2	1				17
Anæmia		1	1					4
Lumbago		4	4					12
Rheumatismus acutus		7	7					44
Syphilis consecutiva		3	2	1				60
Syphilis primitiva		5	5					85
LOCAL DISEASES.								
Diseases of the nervous system.								
Neuralgia		7	6	1				65
Pleurodynia		1	1					1
Vertigo		3	3					34
Diseases of the eye.								
Conjunctivitis		6	5	1				96
Hordeolum		1	1					12
Diseases of the ear.								
Otorrhœa		4	3	1				50
Diseases of the circulatory system.								
Morbi valvularum cordis		1				1		3
Palpitatio		1	1					9
Diseases of the respiratory system.								
Bronchitis acuta		6	6					28
Bronchitis chronica		4	3	1				24
Catarrhus bronchialis		18	18					78
Hæmoptysis		1	1					3
Laryngitis		2	2					24
Phthisis pneumonica chronica		2	2					34
Diseases of the digestive system.								
Cholera morbus		4	4					5
Colica		4	4					11
Diarrhœa acuta		23	20				3	86
Dyspepsia		2	1				1	27
Gastrodynia		2	2					9
Hæmorrhoids		2	1				1	20
Stomatitis		1	1					3
Tonsillitis		16	16					44
Diseases of the genito-urinary system.								
Balanitis		1	1					1
Gonorrhœa		14	13	1				151
Orethritis		4	4					42
Phymosis		1	1					29
Urethræ strictura		2	2					8
Diseases of the locomotive system.								
Periostitis		3	2				1	59
Diseases of the integumentary system.								
Abscessus		10	10					34
Anthrax		1	1					1
Furunculus		12	12					50
Paronychia		2	2					22
Ulcus	1	7	8					77
POISONS.								
Alcoholismus acutus		7	7					13

DETAILED STATEMENT—Continued.

Diseases.	Remaining from last quarter.	Admitted.	Discharged to duty.	Invalided.		Died.	Continued to next quarter.	Total number of sick days.
				To hospital.	From service.			
VIOLENT DISEASES AND DEATHS.								
Abrasio.....		1	1					2
Contusio.....		12	12					79
Fractura.....		1	1					33
Stemma.....		20	18				2	119
Vulnus contusum.....		1	1					4
Vulnus incisum.....		4	4					30
Vulnus punctum.....		3	3					12
Total	1	304	283	11	.....	2	9	2,042

MONOCACY.

[Third rate; iron; side-wheel; 747 tons; service, 365 days; strength, 156.]

Classification of diseases.	Remaining from last year.	Admitted.	Discharged to duty.	Invalided.		Died.	Remaining at the end of the year.	Total number of sick days.
				To hospital.	From service.			
Zymotic diseases.....		10	8	1			1	82
Constitutional diseases.....	1	26	23	3			1	352
Diseases of the nervous system.....		6	4	2				28
Diseases of the eye.....		1	1					2
Diseases of the teeth.....		1	1					4
Diseases of the circulatory system.....		4	2	2				27
Diseases of the respiratory system.....		6	5		1			31
Diseases of the digestive system.....		49	46	3				251
Diseases of the genito-urinary system.....		14	14					187
Diseases of the locomotive system.....		2	2					28
Diseases of the integumentary system.....		19	19					166
Diseases of the absorbent system.....		6	6					200
Poisons.....		3	3					13
Violent diseases and deaths.....	1	39	39	1				290
Total.....	2	187	174	12	1		2	1,661

NOTE.—This vessel was in port 326 days and at sea 39. The average number of days each case was under treatment was 8.7, and the daily average number of sick was 4.5.

AGE TABLE.

	15 to 25.	25 to 35.	35 to 45.	45 to 55.	Over 55
Average number on board.....	46	80	26	2	1
Number sick.....	55	87	87	8	3

DETAILED STATEMENT.

Diseases.	Remaining from last quarter.	Admitted.	Discharged to duty.	Invalided.		Died.	Continued to next quarter.	Total number of sick-days.
			To hospital.	From service.				
GENERAL DISEASES.								
Zymotic diseases.								
Febricula		2	2					3
Febris intermittens		2	2					4
Febris remittens		6	4	1			1	75
Constitutional diseases.								
Adynamia		1	1					4
Lumbago		3	3					68
Rheumatismus acutus		2	2					10
Rheumatismus chronicus	1	7	7	1				140
Syphilis consecutiva		10	7	2			1	98
Syphilis primitiva		2	3					32
LOCAL DISEASES.								
Diseases of the nervous system.								
Cephalalgia		1	1					
Mania		1		1				5
Melancholia		1	1					2
Nausea marina		1	1					1
Pleurodynia		1	1					2
Sciatica		1		1				16
Diseases of the eye.								
Conjunctivitis		1	1					2
Diseases of the teeth.								
Odontalgia		1	1					4
Diseases of the circulatory system.								
Aneurysma		1		1				6
Palpitatio		3	2	1				21
Diseases of the respiratory system.								
Bronchitis acuta		3	3					20
Catarrhus bronchialis		1	1					2
Phthisis pneumonica chronica		1			1			4
Pleuritis		1	1					5
Diseases of the digestive system.								
Colica		2	2					8
Constipatio		1	1					1
Diarrhoea acuta		22	22					64
Dysenteria acuta		10	10					88
Dyspepsia		2	2					6
Hæmorrhoids		2	1	1				11
Hernia		1		1				1
Icterus		3	3					45
Tonsillitis		5	5					17
Typhlitis		1		1				10
Diseases of the genito-urinary system.								
Chancroides		4	4					59
Cystitis		1	1					11
Gonorrhoea		6	6					76
Orchitis		3	3					41
Diseases of the locomotive system.								
Arthritis		2	2					28

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DETAILED STATEMENT—Continued.

Diseases.	Remaining from last quarter.	Admitted.	Discharged to duty.	Invalided.		Died.	Continued to next quarter.	Total number of sick-days.
				To hospital.	From service.			
LOCAL DISEASES—Continued.								
<i>Diseases of the integumentary system.</i>								
Abcessus		7	7					73
Eczema		1	1					11
Erythema		1	1					4
Furunculus		7	7					28
Herpes		1	1					18
Paronychia		1	1					11
Ulcus		1	1					21
<i>Diseases of the absorbent system.</i>								
Adenitis		6	6					200
POISONS.								
Alcoholismus acutus		3	3					13
VIOLENT DISEASES AND DEATHS.								
Abrasio		2	2					21
Ambustio		3	3					14
Contusio		5	5					18
Fractura		1	1					32
Stremma	1	10	11					56
Vulnus contusum		7	7					49
Vulnus incisum		4	4					23
Vulnus laceratum		4	4					31
Vulnus punctum		2	2					35
Vulnus sclopetarium		1		1				11
Total	2	187	174	12	1		2	1,661

PALOS.

[Fourth-rate; iron; screw; tons, 306; strength, 49; service, 365 days.]

Classification of diseases.	Remaining from last year.	Admitted.	Discharged to duty.	Invalided.		Died.	Remaining at the end of the year.	Total number of sick-days.
				To hospital.	From service.			
Zymotic diseases		7	6	1				26
Constitutional diseases		10	9		1			42
Diseases of the nervous system		3	2	1				4
Diseases of the respiratory system		9	9					29
Diseases of the digestive system		10	10					62
Diseases of the genito-urinary system	1	1	2					36
Diseases of the integumentary system		3	3					23
Diseases of the absorbent system		4	2	1			1	100
Poisons		1	1					2
Violent diseases and deaths		5	3	2				46
Total	1	53	47	5	1		1	370

NOTE.—This vessel was in port 338 days and 27 days at sea. The average number of days each case was under treatment was 6.9, and the daily average number of sick was 1.0.

REPORT OF THE SURGEON-GENERAL OF THE NAVY. 165

AGE TABLE.

	15 to 25.	25 to 35.	35 to 45.	45 to 55.	Over 55.
Average number on board	11	24	11	2	1
Number sick	10	21	21	2	.....

DETAILED STATEMENT.

Diseases.	Remaining from last quarter.	Admitted.	Discharged to duty.	Invalided.		Died.	Continued to next quarter.	Total number of sick days.
				To hospital.	From service.			
GENERAL DISEASES.								
<i>Zymotic diseases.</i>								
Febris intermittens		6	6					23
Febris remittens		1		1				3
<i>Constitutional diseases.</i>								
Adynamia		3	3					9
Lumbago		1	1					2
Rheumatismus chronicus		3	3					8
Syphilis consecutiva		3	2		1			23
LOCAL DISEASES.								
<i>Diseases of the nervous system.</i>								
Locomotor ataxia		1		1				1
Nausea marina		1	1					2
Neuralgia		1	1					1
<i>Diseases of the respiratory system.</i>								
Bronchitis acuta		3	3					13
Catarrhus bronchialis		5	5					15
Catarrhus nasalis		1	1					1
<i>Diseases of the digestive system.</i>								
Congestio hepatis		1	1					23
Diarrhoea acuta		4	4					7
Dysenteria acuta		2	2					23
Hæmorrhoids		2	2					6
Tonillitis		1	1					3
<i>Diseases of the genito-urinary system.</i>								
Chancroides	1		1					33
Orchitis		1	1					3
<i>Diseases of the integumentary system.</i>								
Furunculus		1	1					9
Herpes		1	1					8
Unguis involutus		1	1					6
<i>Diseases of the absorbent system.</i>								
Adenitis		4	2	1			1	100
POISONS.								
Alcoholismus acutus		1	1					2
VIOLENT DISEASES AND DEATHS.								
Contusio		2	2					7
Fractura		2		2				21
Vulnus contusum		1	1					18
Total	1	53	47	5	1		1	370

SANITARY CONDITION
OF THE
NAVAL HOSPITALS.

NAVAL HOSPITALS.

GENERAL AGGREGATE.—HOSPITALS, 1883.

Hospital.	Remaining.	Admitted.	Discharged.	Invalided.		Died.	Continued.	Total sick-days.
				From hospital.	From service.			
Boston, Mass.	70	153	150	3	32	6	32	12,367
New York, N. Y.	28	485	272	73	98	3	60	15,821
Philadelphia, Pa.	50	153	125	1	10	19	28	10,532
Washington, D. C.	18	92	86	.....	8	5	11	4,642
Norfolk, Va.	48	154	126	4	35	5	32	11,687
Pensacola, Fla.	1	21	12	.....	4	6	.....	842
Mare Island, Cal.	53	116	80	1	45	6	17	9,382
Yokohama, Japan.	6	56	24	17	.....	3	18	4,056
Total	234	1,228	875	99	232	58	198	69,329

NOTE.—Each case was under treatment on an average of 47 + days.

NAVAL HOSPITAL, BOSTON.

SUMMARY, 1883.

Classification of diseases.	Remaining from last year.	Admitted.	Discharged to duty.	Invalided.		Died.	Remaining at the end of the year.	Total number of sick-days.
				To hospital.	From service.			
Zymotic diseases	2	14	10	.....	1	1	4	605
Constitutional diseases	14	32	26	1	7	.....	13	2,852
Diseases of the nervous system	1	7	3	1	3	.....	1	327
Diseases of the eye	1	2	2	.....	1	.....	.....	211
Diseases of the circulatory system	2	2	3	.....	.....	1	.....	378
Diseases of the respiratory system	22	28	34	1	9	3	3	2,603
Diseases of the digestive system	6	17	15	.....	5	.....	3	1,030
Diseases of the genito-urinary system	9	29	29	.....	1	1	7	1,924
Diseases of the locomotive system	1	3	2	.....	2	.....	.....	342
Diseases of the integumentary system	3	6	8	.....	1	.....	.....	804
Diseases of the absorbent system .....	.....	2	1	.....	.....	.....	1	32
Non-malignant tumors and cysts	1	1	2	185
Violent diseases and deaths	8	10	15	2	1	1,014
Total	70	153	150	3	32	6	32	12,367

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DETAILED STATEMENT.

Diseases.	Remaining from last quarter.	Admitted.	Discharged to duty.	Invalided.		Died.	Continued to next quarter.	Total number of sick days.
				To hospital.	From service.			
GENERAL DISEASES.								
<i>Zymotic diseases.</i>								
Erysipelas.....		2	2					37
Febris enterica.....	1	5	1		1		4	272
Febris intermittens.....		3	3					105
Febris remittens.....	1	1	2					106
Morbilli.....		1	1					9
Parotitis.....		1	1					13
Pyæmia.....		1				1		65
<i>Constitutional diseases.</i>								
Adynamia.....	2	2	4					190
Anæmia.....		1	1					69
Diabetes.....	2	1	1		2			196
Lumbago.....	1	1			2			197
Rheumatismus acutus.....	3	4	6		1			429
Rheumatismus chronicus.....	1	8	7				2	430
Senectus.....	1		1					188
Syphilis consecutiva.....	1	9		1			9	733
Syphilis primitiva.....	3	6	6		2		1	420
LOCAL DISEASES.								
<i>Diseases of the nervous system.</i>								
Dementia.....	1	2	2		1			66
Epilepsia.....		1			1			27
Insolatio.....		1	1					54
Mania.....		2		1	1			90
Neuralgia.....		1					1	87
<i>Diseases of the eye.</i>								
Amaurosis.....	1				1			38
Conjunctivitis.....		2	2					173
<i>Diseases of the circulatory system.</i>								
Aneurysma.....	1					1		281
Angina pectoris.....		1	1					56
Palpitatio.....	1	1	2					41
<i>Diseases of the respiratory system.</i>								
Bronchitis acuta.....	12	1	10		2	1		731
Bronchitis chronica.....	4	9	9		4			631
Catarrhus nasalis.....	1	1	1		1			88
Congestio pulmonalis.....		1				1		1
Hæmoptysis.....		1					1	20
Pleuro-pneumonia.....	2	1	3					143
Phthisis pneumonica chronica.....	3	8	6	1	2	1	1	623
Pneumonia.....		6	5				1	366
<i>Diseases of the digestive system.</i>								
Colica.....		1	1					10
Diarrhœa acuta.....		1	1					8
Diarrhœa chronica.....	1		1					165
Dysenteria chronica.....	1				1			222
Dyspepsia.....		2	2					28
Fistula ani.....		1	1					37
Hæmorrhoids.....	1	4	3				2	129
Hepatitis chronica.....		1	1					129
Hernia.....		2			2			100
Pharyngitis.....		1			1			11
Prolapsus recti.....		1					1	39
Tonsillitis.....	2	3	4		1			116
Vermes.....	1		1					26
<i>Diseases of the genito-urinary system.</i>								
Albuminuria.....		1					1	98
Catarrhus prostatia.....		1	1					21
Chancroides.....		1	1					41
Cystitis.....	1					1		170
Enuresis.....		1	1					58
Fistula perineæ.....		1					1	110
Gonorrhœa.....	1	18	16				3	586

DETAILED STATEMENT—Continued.

Diseases.	Remaining from last quarter.	Admitted.	Discharged to duty.	Invalided.		Died.	Continued to next quarter.	Total number of sick-days.
				To hospital.	From service.			
LOCAL DISEASES—Continued								
<i>Diseases of the genito-urinary system—Continued.</i>								
Hydrocele	2		1		1			132
Nephritis.....		2	1				1	306
Orchitis.....	2	1	3					156
Urethræ strictura	3	3	5				1	246
<i>Diseases of the locomotive system.</i>								
Ostitis	1				1			186
Synovitis		3	2		1			156
<i>Diseases of the integumentary system.</i>								
Abscessus		1	1					160
Eczema	1	1	2					214
Furunculul.....		1	1					7
Onychia		1	1					25
Scabies		1	1					75
Ulcus	2	1	2		1			323
<i>Diseases of the absorbent system.</i>								
Adenitis		2	1				1	32
<i>Non-malignant tumors and cysts.</i>								
Cystis		1	1					14
Polypus	1		1					171
VIOLENT DISEASES AND DEATHS.								
Congelatio	1				1			38
Fractura	4	4	6		1		1	611
Stremma	1	3	4					151
Vulnus contusum	2	2	4					123
Vulnus laceratum		1	1					91
Total	70	153	150	3	32	6	32	12,367

NAVAL HOSPITAL, NEW YORK.

SUMMARY, 1883.

Classification of diseases.	Remaining from last year.	Admitted.	Discharged to duty.	Invalided.		Died.	Remaining at the end of the year.	Total number of sick-days.
				To hospital.	From service.			
Zymotic diseases	1	43	30	8	1		5	1,123
Constitutional diseases	8	105	62	14	22	1	14	3,593
Diseases of the nervous system	2	41	13	11	17		2	1,149
Diseases of the eye		12	6	1	5			345
Diseases of the ear	1	2	1	1	1			81
Diseases of the circulatory system	2	24	8	3	10	3	2	941
Diseases of the respiratory system		46	20	6	15	2	3	1,154
Diseases of the digestive system	3	54	26	6	15	1	9	1,438
Diseases of the genito-urinary system	3	55	36	7	5		10	1,833
Diseases of the locomotive system	2	5	3	1	3			274
Diseases of the integumentary system	2	28	16	7	2		5	1,369
Diseases of the absorbent system		19	14	3		1	1	565
Non-malignant tumors and cysts		4	3				1	185
Poisons		6	6					42
Violent diseases and deaths	4	39	28	5	2		8	1,729
Total	28	483	272	73	98	8	60	15,821

DETAILED STATEMENT.

Diseases.	Remaining from last quarter.	Admitted.	Discharged to duty.	Invalided.		Died.	Continued to next quarter.	Total number of sick-days.
				To hospital.	From service.			
GENERAL DISEASES.								
Zymotic diseases.								
Erysipelas.....		6	5				1	103
Febricula.....		1		1				23
Febris continua simplex.....		5	4	1				43
Febris enterica.....	1	7	3	3			2	286
Febris intermittens.....		12	10	1			1	384
Febris remittens.....		3	2	1				56
Parotitis.....		4	3				1	63
Pyæmia.....		1			1			10
Scarlatina.....		4	3	1				155
Constitutional diseases.								
Adynamia.....		14	8		5		1	323
Anæmia.....		2	2					18
Diabetes.....		2		1			1	191
Lumbago.....		2			2			28
Rheumatismus acutus.....	2	13	9	3			3	538
Rheumatismus chronicus.....	3	22	16	3	4		2	727
Rheumatismus gonorrhoeicus.....		1			1			18
Scrofula.....		2	1					27
Senectus.....		2	1			1		70
Syphilis consecutiva.....	2	25	10	4	10		3	779
Syphilis primitiva.....	1	20	14	3			4	863
Tuberculosis.....		1	1					16
LOCAL DISEASES.								
Diseases of the nervous system.								
Cephalalgia.....		2	1				1	145
Dementia.....		9	3	4	2			148
Epilepsia.....	2	9	2	1	8			336
Irritatio spinalis.....		1	1					22
Mania.....		2		2				11
Melancholia.....		3		3				11
Meningitis.....		1	1					11
Myelitis.....		1					1	47
Neuralgia.....		7	3	1	3			191
Paralysis.....		4			4			202
Pleurodynia.....		1	1					24
Vertigo.....		1	1					1
Diseases of the eye.								
Amaurosis.....		2			2			69
Cataracts.....		1	1					13
Conjunctivitis.....		1		1				1
Iritis.....		3	3					94
Pterygium.....		2			2			113
Retinitis.....		3	2	1				55
Diseases of the ear.								
Otorrhœa.....		1		1				33
Surditas.....	1	1	1		1			48
Diseases of the circulatory system.								
Angina pectoris.....		1			1			38
Endocarditis.....	1		1					78
Morbi valvularum cordis.....	1	10	2		6	3		472
Palpitatio.....		12	4	3	3		2	326
Varix.....		1	1					27
Diseases of the respiratory system.								
Asthma.....		2	1		1			56
Bronchitis acuta.....		12	8	2			2	294
Bronchitis chronica.....		10	1	1	8			190
Catarrhus bronchialis.....		4	2	1		1		47

DETAILED STATEMENT—Continued.

Diseases.	Remaining from last quarter.	Admitted.	Discharged to duty.	Invalided.		Died.	Continued to next quarter.	Total number of sick-days.
				To hospital.	From service.			
LOCAL DISEASES—Continued.								
<i>Diseases of the respiratory system—Continued.</i>								
Hæmoptysis.....		1	1					42
Phthisis pneumonica chronica.....		11	2	2	6	1		257
Pleuritis.....		2	2					92
Pneumonia.....		4	3				1	176
<i>Diseases of the digestive system.</i>								
Cirrhosis hepatis.....		1				1		16
Colica.....		2	2					16
Constipatio.....		2	2					20
Dysenteria acuta.....		2	2					22
Dysenteria chronica.....		2	1		1			33
Dyspepsia.....		4	2	1	1			122
Enteritis.....	1			1				17
Fistula ani.....		1		1			1	55
Hæmorrhoids.....		4	1		1		2	209
Hepatitis acuta.....		1	1					7
Hepatitis chronica.....		2			2			27
Hernia.....	1	14	3	1	9		2	452
Icterus.....		1		1				4
Pharyngitis.....		2		1	1			195
Prolapsus ani.....	1		1					11
Tonsillitis.....		14	10	1			3	178
Typhlitis.....		1					1	41
Verues.....		1	1					13
<i>Diseases of the genito-urinary system.</i>								
Albuminuria.....		1			1			22
Balanitis.....		1	1					11
Chancroides.....		10	6	3			1	386
Cystitis.....		5	2	1	1		1	154
Emuresia.....		1			1			12
Gonorrhœa.....		16	10	2			5	587
Hydrocele.....		1					1	93
Orchitis.....	2	7	9					236
Paraphymosis.....		1	1					63
Phymosis.....		2	2					44
Spermatorrhœa.....		1			1			16
Urethra strictura.....		6	4	1			1	101
Varicocele.....		3	1		1		1	94
<i>Diseases of the locomotive system.</i>								
Necrosis.....	1	2	1	1	1			174
Periostitis.....		2	2					65
Synovitis.....	1	1			2			35
<i>Diseases of the integumentary system.</i>								
Abcessus.....	2	3	2	3				199
Anthrax.....		1					1	43
Ecthyma.....		1					1	163
Eczema.....		2	2					34
Furunculul.....		2	1	1				23
Onychia.....		1	1					2
Pernio.....		1	1					73
Psoriasis.....		1					1	29
Ulcus.....		16	9	3	2		2	811
<i>Diseases of the absorbent system.</i>								
Adenitis.....		19	14	3		1	1	565
<i>Non-malignant tumors and cysts.</i>								
Cystis.....		1	1					60
Lipoma.....		1	1					15
Osteoma.....		2	1				1	110

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DETAILED STATEMENT—Continued.

Diseases.	Remaining from last quarter.	Admitted.	Discharged to duty.	Invalided.			Continued to next quarter.	Total number of sick-days.
				To hospital.	From service.	Died.		
POISONS.								
Alcoholismus acutus.....		2	2					19
Alcoholismus chronicus.....		2	2					17
Ebrietas.....		2	2					6
VIOLENT DISEASES AND DEATHS.								
Abrasio.....		1	1					17
Ambustio.....		2	1	1				106
Concusio cerebri.....		1	1					96
Contusio.....	1	6	3	2				187
Fractura.....	13	10	5		1		2	706
Luxatio.....		1	1					23
Stremma.....	1	7	5		1			424
Vulnus contusum.....	1	2	2	1			2	182
Vulnus laceratum.....	1	2	2	1				72
Vulnus sclopetarium.....		1	1					2
Total.....	28	483	272	73	98	8	60	15,821

NAVAL HOSPITAL, PHILADELPHIA.

SUMMARY, 1883.

Classification of diseases.	Remaining from last year.	Admitted.	Discharged to duty.	Invalided.			Remaining at the end of the year.	Total number of sick-days.
				To hospital.	From service.	Died.		
Zymotic diseases.....	1	24	22			1	2	990
Constitutional diseases.....	7	21	13			5	2	540
Diseases of the nervous system.....	5	15	2	1	2	2	1	239
Diseases of the eye.....	1	2	2					375
Diseases of the circulatory system.....		2	2			1		27
Diseases of the respiratory system.....	6	18	12		1	5	5	1,846
Diseases of the digestive system.....	5	19	17		2	3	1	1,063
Diseases of the genito-urinary system.....	3	6	5		2	1		615
Diseases of the integumentary system.....		2	2					67
Poisons.....		32	31			1		195
Violent diseases and deaths.....	2	11	11		1		1	575
Total.....	30	153	125	1	10	19	28	10,532

DETAILED STATEMENT.

Diseases.	Remaining from last quarter.	Admitted.	Discharged to duty.	Invalided.		Died.	Continued to next quarter.	Total number of sick-days.
				To hospital.	From service.			
GENERAL DISEASES.								
Zymotic diseases.								
Diphtheria.....		1	1					1
Erysipelas.....		6	5			1		185
Febris continua simplex.....		1	1					7
Febris intermittens.....	1	11	11				1	321
Febris remittens.....		3	3					425
Morbilli.....		1					1	44
Parotitis.....		1	1					7
Constitutional diseases.								
Adynamia.....	1	1	1		1			101
Carcinoma.....		1				1		2
Diabetes.....		1					1	78
Rheumatismus acutus.....	1	3	4					263
Rheumatismus chronicus.....	2	6	4			1	3	920
Senectus.....	3	4	1			3	3	957
Syphilis consecutiva.....		4	2		1		1	154
Syphilis primitiva.....		1	1					65
LOCAL DISEASES.								
Diseases of the nervous system.								
Apoplexia.....		1				1		0
Dementia.....		6	4	1			1	124
Epilepsia.....		2			2			37
Melancholia.....	1		1					282
Neuralgia.....		1	1					109
Paralysis.....	4	1	1			1	3	1,436
Sciatica.....		1					1	173
Vertigo.....		3	1				2	78
Diseases of the eye.								
Amaurosis.....		1	1					10
Asthenopia.....		1					1	89
Cataracta.....	1		1					276
Diseases of the circulatory system.								
Morbi valvularum cordis.....		3	2			1		27
Diseases of the respiratory system.								
Abscess, pulmonary.....		1	1					26
Asthma.....	1	2	1				2	477
Bronchitis acuta.....	1		1					30
Bronchitis chronica.....	1						1	365
Catarrhus bronchialis.....	1	4	5					40
Congestion, pulmonary.....		1				1		169
Phthisis pneumonica acuta.....	1		1					63
Phthisis pneumonica chronica.....	1	4	1			1	3	508
Pleuritis.....		1			1			51
Pneumonia.....		5	2			3		117
Diseases of the digestive system.								
Colica.....		4	4					82
Diarrhoea acuta.....		1	1					16
Dyspepsia.....	1	7	7				1	581
Fistula ani.....	1	1	1		1			166
Hepatitis chronica.....		1					1	78
Hernia.....	1	1	1		1			62
Icterus.....	1	2	1			2		63
Peritonitis.....	1					1		0
Tonsillitis.....		2	2					15

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DETAILED STATEMENT—Continued.

Diseases.	Remaining from last quarter.	Admitted.	Discharged to duty.	Invalided.		Died.	Continued to next quarter.	Total number of sick-days.
				To hospital.	From service.			
GENERAL DISEASES—Continued.								
<i>Diseases of the genito-urinary system.</i>								
Albuminuria.....	2	—	2	—	—	—	—	309
Nephritis.....	1	3	2	—	—	1	1	210
Prostatitis.....	—	1	1	—	—	—	—	34
Urethra strictura.....	—	2	—	—	2	—	—	71
<i>Diseases of the integumentary system.</i>								
Eczema.....	—	1	1	—	—	—	—	31
Ulcer.....	—	1	1	—	—	—	—	36
POISONS.								
Alcoholismus acutus.....	—	31	30	—	—	1	—	194
Ebriositas.....	—	1	1	—	—	—	—	1
VIOLENT DISEASES AND DEATHS.								
Abrasio.....	—	1	1	—	—	—	—	54
Contusio.....	—	3	2	—	—	—	1	51
Fractura.....	1	3	4	—	—	—	—	254
Luxatio.....	—	1	1	—	—	—	—	131
Strenua.....	1	1	1	—	1	—	—	30
Vulnus contusum.....	—	2	2	—	—	—	—	100
Total.....	30	153	125	1	10	19	28	10,532

NAVAL HOSPITAL, WASHINGTON, D. C.

SUMMARY, 1883.

Classification of diseases.	Remaining from last year.	Admitted.	Discharged to duty.	Invalided.		Died.	Remaining at the end of the year.	Total number of sick-days.
				To hospital.	From service.			
Zymotic diseases.....		17	15			1	1	564
Constitutional diseases.....	2	28	25		3		2	1,062
Diseases of the nervous system.....	1	2	2		1			111
Diseases of the eye.....	2		2					101
Diseases of the circulatory system.....	4	2	2		2			173
Diseases of the respiratory system.....	3	10	9			2	2	1,018
Diseases of the digestive system.....		11	10				1	364
Diseases of the genito-urinary system.....	3	9	10				2	335
Diseases of the locomotive system.....	1	1	2					99
Diseases of the integumentary system.....		2	1				1	69
Diseases of the absorbent system.....	1	2	2				1	161
Violent diseases and deaths.....	1	8	6		2		1	584
Total.....	18	92	86		8	5	11	4,642

DETAILED STATEMENT.

Diseases.	Remaining from last quarter.	Admitted.	Discharged to duty.	Invalided.		Died.	Continued to next quarter.	Total number of sick-days.
				To hospital.	From service.			
GENERAL DISEASES.								
Zymotic diseases.								
Erysipelas.....		1	1					12
Febricula.....		1	1					16
Febris enterica.....		3	2				1	219
Febris intermittens.....		11	10		1			279
Febris remittens.....		1	1					38
Constitutional diseases.								
Adynamia.....		4	4					189
Anæmia.....		1	1					66
Lumbago.....		2	2					21
Rheumatismus acutus.....		3	3					64
Rheumatismus chronicus.....		5	5					96
Syphilis consecutiva.....	1	9	8		2			422
Syphilis primitiva.....	1	4	2		1		2	205
LOCAL DISEASES.								
Diseases of the nervous system.								
Epilepsia.....	1	1	1		1			104
Melancholia.....		1	1					7
Diseases of the eye.								
Choroiditis.....	1		1					43
Iritis.....	1		1					58
Diseases of the circulatory system.								
Dilatatio cordis.....	1					1		34
Hydrops pericardii.....		1	1					11
Morbi valvularum cordis.....	2	1	1		1	1		107
Varix.....	1				1			21
Diseases of the respiratory system.								
Asthma.....		1					1	11
Bronchitis acuta.....		2	2					143
Bronchitis chronica.....		2	1				1	330
Catarrhus bronchialis.....		2	2					115
Laryngitis.....		1	1					41
Phthisis pneumonica chronica.....	1	1			2			335
Pleuritis.....	2	1	3					44
Diseases of the digestive system.								
Congestio hepatis.....		1	1					7
Diarrhoea acuta.....		2	2					58
Diarrhoea chronica.....		4	4					157
Hernia.....		2	1				1	42
Tonsillitis.....		1	1					17
Vermes.....		1	1					83
Diseases of the genito-urinary system.								
Chancroides.....	2	3	4				1	214
Cystitis.....	1		1					21
Emurea.....		1	1					24
Gonorrhoea.....		2	1				1	12
Nephritis.....		1	1					25
Orchitis.....		2	2					39
Diseases of the locomotive system.								
Caries.....	1		1					89
Synovitis.....		1	1					10
Diseases of the integumentary system.								
Eczema.....		2	1				1	100

DETAILED STATEMENT—Continued.

Diseases.	Remaining from last quarter.	Admitted.	Discharged to duty.	Invalided.		Continued to next quarter.	Total number of sick days.
				To hospital.	From service.	Died.	
LOCAL DISEASES—Continued.							
<i>Diseases of the absorbent system.</i>							
Adenitis.....	1	2	2			1	161
VIOLENT DISEASES AND DEATHS.							
Contusio.....	1	3	2		2		328
Luxatio.....		1				1	25
Struma.....		1	1				52
Vulnus contusum.....		1	1				24
Vulnus incisum.....		1	1				141
Vulnus punctum.....		1	1				14
Total.....	18	92	86		8	5	4, 642

Passed Assistant Surgeon J. H. Gaines reports the following case of epilepsy, presenting some unusual symptoms :

J. B., third-class musician, thirty-eight years of age, native of London, England. Admitted July 20, 1882, from Marine Barracks. "At 9.45, July 20, 1882, whilst practicing with the band in the band-room, fell backward and became unconscious." A summary of the prominent features of the case is as follows: The seizures were followed by temporary paralysis of motion and sensation in the left arm and left leg. That of the leg was more marked in its character than that of the arm. The paralysis disappeared entirely after his recovery from each seizure. Paralysis of the left geniohyoglossus muscle which caused the tongue to incline to the left side, when protruded, very marked after the seizures. There was no paralysis of any other muscle of the tongue or pharynx. The full power of this muscle of the tongue has never been entirely restored after any of his attacks. Respiration was often so rapid during the seizures that it was almost impossible to count the number per minute. The pupils were normal and the pulse slow, but in other respects normal. He always fell backward in the seizures and with great force, so severe, as a rule, that his fall was heard over the entire building, yet he never presented any marked contusions. There was never the slightest observable premonition of an attack, and there was no complaint of pain in any part of the body, except upon two occasions, when he complained of pain in the præcordia at night. His health after his seizures was good, and his mind was active and vigorous as ever. He never was convulsed, simply fell backwards and became unconscious; there was no twitching of the muscles save of the orbicularis palpebrarum, and that was only observed on the return of consciousness; there was never at any time frothing at the mouth, wounding of the tongue, or dilated pupils, and he never uttered a cry when he fell. As far as could be ascertained there was no specific taint, although many of the symptoms pointed to a syphilitic origin, such as paralysis of one muscle of a group (geniohyoglossus),* and the fact that the seizures were brought under control sooner when the iodide was combined with the bromide of potassium.

* Keyes: N. Y. Med. Jour., November, 1870.

NAVAL HOSPITAL, NORFOLK.

SUMMARY, 1883.

Classification of diseases.	Remaining from last year.	Admitted.	Discharged to duty.	Invalided.		Died.	Remaining at the end of the year.	Total number of sick-days.
				To hospital.	From service.			
Zymotic diseases.....	2	24	17		2		7	1,371
Constitutional diseases.....	12	38	34	1	10		5	3,084
Diseases of the nervous system.....	1	9	6		2	1	1	466
Diseases of the eye.....	1	3					2	101
Diseases of the circulatory system.....		5	2		2		1	207
Diseases of the respiratory system.....	8	27	16	1	10	2	6	2,465
Diseases of the digestive system.....	6	10	13		2		1	629
Diseases of the genito-urinary system.....	7	13	16		2		2	1,300
Diseases of the locomotive system.....	1		1					61
Diseases of the integumentary system.....	5	8	9		1	1	2	595
Diseases of the absorbent system.....	2	4	5		1			252
Violent diseases and deaths.....	3	13	7	2	1	1	5	1,156
Total.....	48	154	126	4	35	5	32	11,687

DETAILED STATEMENT.

Diseases.	Remaining from last quarter.	Admitted.	Discharged to duty.	Invalided.		Died.	Continued to next quarter.	Total number of sick-days.
				To hospital.	From service.			
GENERAL DISEASES.								
Zymotic diseases.								
Erysipelas.....		1	1					31
Febris continua simplex.....		1					1	36
Febris enterica.....		2	1				1	53
Febris intermittens.....	1	13	9		2		3	957
Febris remittens.....	1	5	5				1	238
Morbilli.....		1	1					12
Vaccina.....		1					1	49
Constitutional diseases.								
Adynamia.....	2	6	5		1		2	201
Anæmia.....		1			1			24
Rheumatismus acutus.....	2	7	6		1		2	466
Rheumatismus chronicus.....	3	8	7		4			875
Syphilis consecutiva.....	1	14	11	1	3			1,067
Syphilis primitiva.....	4	2	5				1	451
LOCAL DISEASES.								
Diseases of the nervous system.								
Apoplexia.....		1				1		0
Epilepsia.....		1	1					46
Melancholia.....		1					1	151
Meningitis.....	1				1			31
Neuralgia.....		4	4					169
Pleurodynia.....		1	1					22
Vertigo.....		1			1			47
Diseases of the eye.								
Amaurosis.....		1			1			18
Keratitis.....		1					1	48
Ophthalmia.....		1					1	29
Retinitis.....	1				1			6

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DETAILED STATEMENT—Continued.

Diseases.	Remaining from last quarter.	Admitted.	Discharged to duty.	Invalided.		Died.	Continued to next quarter.	Total number of sick-days.
				To hospital.	From service.			
LOCAL DISEASES—Continued.								
<i>Diseases of the circulatory system.</i>								
Morbi valvularum cordis		1			1			43
Palpitatio		2	1		1			86
Varix		2	1				1	78
<i>Diseases of the respiratory system.</i>								
Asthma		1	1					97
Bronchitis acuta		8	6	1	1			386
Bronchitis chronica	3	4	4		2		1	556
Catarrhus bronchialis	1	1			2			270
Hæmoptysis	1	1			1		1	209
Laryngitis		2	1				1	50
Phthisis pneumonica chronica	3	5	2		4	1	1	745
Pleuritis	1	1					1	27
Pneumonia		4	2			1	1	134
<i>Diseases of the digestive system.</i>								
Diarrhœa acuta	2	4	6					234
Diarrhœa chronica		1					1	92
Dysenteria chronica	1	2	2		1			37
Dyspepsia	1		1					99
Hæmatemesia		1	1					12
Hæmorrhoids	2	2	3		1			155
<i>Diseases of the genito-urinary system.</i>								
Chancroides	3	2	5					377
Cystitis		1			1			17
Gonorrhœa		6	4				2	574
Orchitis	1	2	3					143
Phymosis	1		1					62
Prostatitis		1	1					16
Urethræ strictura	2		1		1			91
Varicocele		1	1					20
<i>Diseases of the locomotive system.</i>								
Synovitis	1		1					61
<i>Diseases of the integumentary system.</i>								
Abscessus	2	3	3			1	1	144
Eczema		1	1					69
Herpes		1	1					76
Impetigo	1		1					29
Paronychia		1	1					48
Scabies		1	1					34
Ulcus	2	1	1		1		1	195
<i>Diseases of the absorbent system.</i>								
Adenitis	2	4	5		1			252
VIOLENT DISEASES AND DEATHS.								
Contusio	2	1	3					149
Fractura	1	7	1	1		1	5	747
Stremma		2	2					226
Vulnus contusum		2	1	1				17
Vulnus laceratum		1			1			17
Total	48	154	126	4	35	5	32	11,687

NAVAL HOSPITAL, PENSACOLA.

SUMMARY, 1883.

Classification of diseases.	Remaining from last year.	Admitted.	Discharged to duty.	Invalided.		Died.	Remaining at the end of the year.	Total number of sick-days.
				To hospital.	From service.			
Zymotic diseases		11	4	.....	1	6	.....	255
Constitutional diseases	1	5	4	.....	2		.....	404
Diseases of the nervous system.....		3	3	.....			.....	74
Diseases of the digestive system.....		1	1	.....			.....	11
Diseases of the integumentary system.....		1	.....	.....	1	.....	.....	98
Total	1	21	12	.....	4	6	.....	842

DETAILED STATEMENT.

Diseases.	Remaining from last quarter.	Admitted.	Discharged to duty.	Invalided.		Died.	Continued to next quarter.	Total number of sick-days.
				To hospital.	From service.			
GENERAL DISEASES.								
<i>Zymotic diseases.</i>								
Febris flava		8	1		1	6		168
Febris intermittens		3	3					87
<i>Constitutional diseases.</i>								
Anæmia		2	1		1			181
Lumbago	1		1					31
Scrofula		1			1			77
Syphilis primitiva		2	2					115
LOCAL DISEASES.								
<i>Diseases of the nervous system.</i>								
Cephalalgia		3	3					74
<i>Diseases of the digestive system.</i>								
Dysenteria acuta		1	1					11
<i>Diseases of the integumentary system.</i>								
Ulcus		1			1			98
Total	1	21	12		4	6		842

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NAVAL HOSPITAL, MARE ISLAND.

SUMMARY, 1883.

Classification of diseases.	Remaining from last year.	Admitted.	Discharged to duty.	Invalided.		Died.	Remaining at the end of the year.	Total number of sick-days.
				To hospital.	From service.			
Zymotic diseases.....	3	4	6					457
Constitutional diseases.....	3	18	10		8		3	1,327
Diseases of the nervous system.....	5	12	5	1	7	1	3	825
Diseases of the eye.....	3	3	3		2			356
Diseases of the ear.....		1	1					42
Diseases of the circulatory system.....	1	6	1		5	1		503
Diseases of the respiratory system.....	10	28	20		10	2	6	2,556
Diseases of the digestive system.....	2	17	12		6	1		573
Diseases of the genito-urinary system.....	1	15	12		2		2	1,336
Diseases of the locomotive system.....	1		1					6
Diseases of the integumentary system.....	4	2	3		2		1	711
Diseases of the absorbent system.....	1	4	4		1			292
Poisons.....		1	1					44
Violent diseases and deaths.....	1	5	1		2	1	2	355
Total.....	33	116	80	1	45	6	17	9,382

DETAILED STATEMENT.

Diseases.	Remaining from last quarter.	Admitted.	Discharged to duty.	Invalided.		Died.	Continued to next quarter.	Total number of sick-days.
			To hospital.	From service.				
GENERAL DISEASES.								
<i>Zymotic diseases.</i>								
Febris remittens.....	2	4	6					457
<i>Constitutional diseases.</i>								
Adynamia.....	1	5	2		4			320
Diabetes.....		2			2			155
Rheumatismus acutus.....	1		1					44
Rheumatismus chronicus.....		3	1		2			82
Syphilis consecutiva.....		8	5				3	692
Syphilis primitiva.....	1		1					34
LOCAL DISEASES.								
<i>Diseases of the nervous system.</i>								
Convulsio.....	1		1					10
Dementia.....	1	3		1	1	1	1	223
Epilepsia.....	1	2	2		1			100
Mania.....	1		1					106
Melancholia.....		1			1			5
Myelitis.....		1			1			23
Neuralgia.....	1	3	1		2		1	250
Paralysis.....		2			1		1	48
<i>Diseases of the eye.</i>								
Conjunctivitis.....	1	1	2					233
Dacrocystitis.....	1		1					4
Hypermetropia.....		1			1			39
Stricture lachrymalis.....		1			1			81
<i>Diseases of the ear.</i>								
Otorrhœa.....		1	1					42

DETAILED STATEMENT—Continued.

Diseases.	Remaining from last quarter.	Admitted.	Discharged to duty.	Invalided.			Continued to next quarter.	Total number of sick days.
				To hospital.	From service.	Died.		
LOCAL DISEASES—Continued.								
<i>Diseases of the circulatory system.</i>								
Aneurysma.....	1	1			1	1		91
Hypertrophica cordis.....		1			1			103
Morbi valvularum cordis.....		2			2			146
Pericarditis.....		1			1			103
Varix.....		1	1					50
<i>Diseases of the respiratory system.</i>								
Asthma.....		5	3		1		1	337
Bronchitis acuta.....		5	5					511
Bronchitis chronica.....		9	5		1		3	718
Catarrhus nasalis.....	1				1			146
Emphysema.....		1			1			41
Laryngitis.....	2		2					23
Phthisis pneumonica chronica.....	3	4	1		4	1	1	259
Pleuritis.....	2	2	3		1			320
Pneumonia.....	2	2	1		1	1	1	201
<i>Diseases of the digestive system.</i>								
Dysenteria acuta.....		1	1					9
Enteritis.....		1	1					14
Fistula ani.....	1		1					29
Hæmorrhoids.....		1	1					15
Hernia.....		4			4			134
Icterus.....	1		1					55
Peritonitis.....		1				1		0
Pharyngitis.....		1	1					2
Prolapsus ani.....		1			1			27
Tonsillitis.....		6	5		1			262
Typhlitis.....		1	1					15
<i>Diseases of the genito-urinary system.</i>								
Albuminuria.....		4	4					148
Chancroides.....		1	1					82
Cystitis.....		1	1					104
Hæmaturia.....		1	1					47
Nephritis.....	1	1	1				1	252
Orchitis.....		1			1			117
Urethra strictura.....		6	4		1		1	586
<i>Diseases of the locomotive system.</i>								
Synovitis.....	1		1					6
<i>Diseases of the integumentary system.</i>								
Abcessus.....	2	1	2				1	458
Rupia.....		1			1			63
Ulcus.....	2		1		1			190
<i>Diseases of the absorbent system.</i>								
Adenitis.....	1	4	4		1			292
POISONS.								
Vulnus venenatum.....		1	1					44
VIOLENT DISEASES AND DEATHS.								
Fractura.....		3			1	1	1	105
Stremma.....		2			1		1	115
Vulnus incisum.....		1	1					135
Total.....	33	116	80	1	45	6	17	9,382

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NAVAL HOSPITAL, YOKOHAMA.

SUMMARY, 1883.

Classification of disease.	Remaining from last year.	Admitted.	Discharged to duty.	Invalided.		Died.	Remaining at the end of the year.	Total number of sick-days.
				To hospital.	From service.			
Zymotic diseases.....		3					3	203
Constitutional diseases.....	1	16	7	4		1	5	814
Diseases of the nervous system.....		3	1	1			1	225
Diseases of the eye.....		1					1	61
Diseases of the ear.....		2		1			1	98
Diseases of the circulatory system.....	1	4		3			2	553
Diseases of the respiratory system.....		5		3		1	2	260
Diseases of the digestive system.....		11	10	1				616
Diseases of the genito-urinary system.....	1	3	1	2			1	342
Diseases of the locomotive system.....		1		1				101
Diseases of the integumentary system.....	1	2	2			1		243
Diseases of the absorbent system.....	2		2					222
Violent diseases and deaths.....		5	1	2			2	309
Total.....	6	56	24	17		3	18	4,056

DETAILED STATEMENT.

Diseases.	Remaining from last quarter.	Admitted.	Discharged to duty.	Invalided.			Continued to next quarter.	Total number of sick- days.
				To hospital.	From service.	Died.		
GENERAL DISEASES.								
Zymotic diseases.								
Erysipelas.....		1					1	161
Febris intermittens.....		1					1	23
Febris remittens.....		1					1	9
Constitutional diseases.								
Adynamia.....		3	1				2	44
Rheumatismus acutus.....		1					1	9
Rheumatismus chronicus.....		2	1				1	65
Syphilis consecutiva.....	1	10	5	4		1	1	693
LOCAL DISEASES.								
Diseases of the nervous system.								
Dementia.....		1		1				42
Meningitis.....		1					1	28
Paralysis.....		1	1					155
Diseases of the eye.								
Conjunctivitis.....		1					1	61
Diseases of the ear.								
Otorrhœa.....		1					1	33
Surditas.....		1		1				65
Diseases of the circulatory system.								
Aneurysma.....		1				1		34
Dilatatio cordis.....	1						1	365
Hypertrophia cordis.....		1		1				65
Palpitatio.....		2		1			1	80

DETAILED STATEMENT—Continued.

Diseases.	Remaining from last quarter.	Admitted.	Discharged to duty.	Invalided.		Dead.	Continued to next quarter.	Total number of sick-days.
				To hospital.	From service.			
LOCAL DISEASES—Continued.								
<i>Diseases of the respiratory system.</i>								
Bronchitis chronica.....		2		1			1	74
Laryngitis.....		1		1			1	75
Phtthisis pneumonica chronica.....		1		1				67
Pneumonia.....		1		1				53
<i>Diseases of the digestive system.</i>								
Diarrhœa acuta.....		1						35
Diarrhœa chronica.....		8	8					409
Hæmorrhœia.....		1	1					12
Hernia.....		1		1				160
<i>Diseases of the genito-urinary system.</i>								
Gonorrhœa.....	1		1					111
Urethrae stricture.....		3		2			1	231
<i>Diseases of the locomotive system.</i>								
Synovitis.....		1		1				101
<i>Diseases of the integumentary system.</i>								
Abcessus.....		1				1		3
Ulcus.....	1		1					227
Urticaria.....		1	1					13
<i>Diseases of the absorbent system.</i>								
Adenitis.....	2		2					222
VIOLENT DISEASES AND DEATHS.								
Concussio cerebri.....		1		1				94
Contusio.....		1	1					66
Fractura.....		2					2	107
Vulnus sclopetarium.....		1		1				42
Total.....	6	56	24	17		3	18	4,056



SANITARY CONDITION
OF THE
NAVY-YARDS.

NAVY-YARD, PORTSMOUTH, N. H.

SUMMARY, 1883.

Classification of diseases.	Remaining from last year.	Admitted.	Discharged to duty.	Invalided.		Died.	Remaining at the end of the year.	Total number of sick days.
				To hospital.	From service.			
Zymotic diseases.....	1	.....	1	.....	.....	.....	.....	2
Constitutional diseases.....	4	5	6	2	1	.....	.....	950
Diseases of the nervous system.....	1	2	2	1	.....	.....	.....	293
Diseases of the eye.....	.....	3	1	.....	1	.....	1	208
Diseases of the circulatory system.....	.....	1	1	.....	.....	.....	.....	8
Diseases of the respiratory system.....	2	10	9	1	.....	.....	2	569
Diseases of the digestive system.....	.....	5	5	.....	.....	.....	.....	89
Diseases of the genito-urinary system.....	.....	3	1	.....	.....	.....	2	88
Diseases of the locomotive system.....	.....	2	1	.....	.....	.....	1	282
Diseases of the integumentary system.....	.....	6	3	.....	.....	.....	3	225
Disease of the absorbent system.....	1	.....	1	.....	.....	.....	.....	132
Violent diseases and deaths.....	1	7	6	.....	2	.....	.....	190
Total.....	10	44	37	4	4	.....	9	3,036

DETAILED STATEMENT.

Diseases.	Remaining from last quarter.	Admitted.	Discharged to duty.	Invalided.		Died.	Continued to next quarter.	Total number of sick days.
				To hospital.	From service.			
GENERAL DISEASES.								
<i>Zymotic diseases.</i>								
Erysipelas.....	1		1					2
<i>Constitutional diseases.</i>								
Adynamia.....	1		1					38
Lumbago.....	1			1				280
Rheumatismus chronicus.....	2	1	2	1				349
Syphilis consecutiva.....		3	2		1			116
Syphilis primitiva.....		1	1					167
LOCAL DISEASES.								
<i>Diseases of the nervous system.</i>								
Dementia.....	1			1				280
Neuralgia.....		1	1					2
Vertigo.....		1	1					11
<i>Diseases of the eye.</i>								
Asthenopia.....		1			1			21
Conjunctivitis.....		2	1				1	187
<i>Diseases of the circulatory system.</i>								
Syncope.....		1	1					8

DETAILED STATEMENT—Continued.

Diseases.	Remaining from last quarter.	Admitted.	Discharged to duty.	Invalided.		Died.	Continued to next quarter.	Total number of sick days.
				To hospital.	From service.			
LOCAL DISEASES—Continued.								
<i>Diseases of the respiratory system.</i>								
Bronchitis acuta.....		3	1				2	47
Bronchitis chronica.....	1			1				280
Catarrhus bronchialis.....		5	5					77
Phthisis pneumonica chronica.....	1	1	2					111
Pneumonia.....		1	1					54
<i>Diseases of the digestive system.</i>								
Gastritis.....		1	1					8
Hæmorrhoids.....		1	1					48
Stomatitis.....		2	2					27
Tonsillitis.....		1	1					6
<i>Diseases of the genito-urinary system.*</i>								
Gonorrhœa.....		1					1	4
Orchitis.....		2	1				1	84
<i>Diseases of the locomotive system.</i>								
Arthritis.....		1	1					125
Periostitis.....		1					1	157
<i>Diseases of the integumentary system.</i>								
Abcessus.....		2	1				1	141
Forunculus.....		2	2					23
Ulcus.....		1					1	39
Unguis involutus.....		1					1	22
<i>Diseases of the absorbent system.</i>								
Adenitis.....	1		1					132
VIOLENT DISEASES AND DEATHS.								
Ambustio.....		1	1					10
Contusio.....		1	1					2
Fractura.....	1	2	1		2			148
Stremma.....		2	2					21
Vulnus contusum.....		1	1					9
Total.....	10	44	37	4	4		9	3,036

NAVY-YARD, BOSTON.

SUMMARY, 1883.

Classification of diseases.	Remaining from last year.	Admitted.	Discharged to duty.	Invalided.		Died.	Remaining at the end of the year.	Total number of sick days.
				To hospital.	From service.			
Zymotic diseases.....		20	18	1			1	165
Constitutional diseases.....	3	23	15	8	1		1	182
Diseases of the nervous system.....		2	1	1				8
Diseases of the respiratory system.....		19	17	1	1			80
Diseases of the digestive system.....		16	14	1			1	83
Diseases of the genito-urinary system.....		19	3	15			1	32
Diseases of the integumentary system.....		9	6	2	1			62
Diseases of the absorbent system.....		5	4	1				29
Poisons.....		2	2					5
Violent diseases and deaths.....		18	16				2	83
Total.....	2	133	96	30	3		6	729

DETAILED STATEMENT.

Diseases.	Remaining from last quarter.	Admitted.	Discharged to duty.	Invalided.		Died.	Continued to next quarter.	Total number of sick-days.
			To hospital.	From service.				
GENERAL DISEASES.								
Zymotic diseases.								
Erysipelas		4	3				1	62
Febris continua simplex		2	2					13
Febris intermittens		9	9					43
Febris remittens		2	2					32
Morbilli		1		1				1
Vaccina		2	2					14
Constitutional diseases.								
Adynamia	1	5	5				1	103
Lumbago		1	1					7
Rheumatismus acutus		9	8	1				56
Rheumatismus chronicus	1		1					0
Syphilis consecutiva		2		1	1			10
Syphilis primitiva		6		6				6
LOCAL DISEASES.								
Diseases of the nervous system.								
Incoelatio		1		1				6
Insomnia		1	1					2
Diseases of the respiratory system.								
Bronchitis chronica		2	2					17
Catarrhus nasalis		11	11					34
Phthisis pneumonica chronica		2		1	1			15
Pleuritis		4	4					14
Diseases of the digestive system.								
Colica		1	1					4
Diarrhoea acuta		6	5				1	18
Dysenteria acuta		2	2					6
Hæmorrhoids		3	2	1				41
Tonsillitis		4	4					14
Diseases of the genito-urinary system.								
Gonorrhoea		16		15			1	16
Orchitis		2	2					10
Phymosis		1	1					6
Diseases of the integumentary system.								
Abcessus		6	5	1				43
Eczema		1	1					7
Scabies		2		1	1			12
Diseases of the absorbent system.								
Adenitis		2	1	1				19
Lymphangitis		3	3					10
POISONS.								
Alcoholismus acutus		2	2					5
VIOLENT DISEASES AND DEATHS.								
Abrasio		1	1					2
Contusio		6	6					17
Stremma		6	5				1	34
Vulnus contusum		3	2				1	16
Vulnus incisum		1	1					6
Vulnus punctum		1	1					8
Total	2	133	96	30	3		6	729

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NAVY-YARD, NEW YORK.

SUMMARY, 1883.

Classification of diseases.	Remaining from last year.	Admitted.	Discharged to duty.	Invalided.		Died.	Remaining at the end of the year.	Total number of sick-days.
				To hospital.	From service.			
Zymotic diseases		12	2					9
Constitutional diseases		12	1				1	23
Diseases of the nervous system		12	1					27
Diseases of the respiratory system		12	1					23
Diseases of the digestive system		5	4	1				24
Diseases of the genito-urinary system		1	1					11
Diseases of the integumentary system	1	1	1					11
Violent diseases and deaths		3	1	1			1	29
Total	1	19	16	2			2	157

DETAILED STATEMENT.

Diseases.	Remaining from last quarter.	Admitted.	Discharged to duty.	Invalided.		Died.	Continued to next quarter.	Total number of sick-days.
				To hospital.	From service.*			
GENERAL DISEASES.								
<i>Zymotic diseases.</i>								
Febris intermittens		2	2					9
<i>Constitutional diseases.</i>								
Podagra		1					1	3
Rheumatismus acutus		1	1					20
LOCAL DISEASES.								
<i>Diseases of the nervous system.</i>								
Neuralgia		2	2					27
<i>Diseases of the respiratory system.</i>								
Bronchitis acuta		2	2					20
Catarrhus bronchialis		1	1					3
<i>Diseases of the digestive system.</i>								
Constipatio		1	1					4
Diarrhoea acuta		1	1					5
Hæmatemesis		1		1				1
Tonsillitis		2	2					14
<i>Diseases of the genito-urinary system.</i>								
Nephritis		1	1					11
<i>Diseases of the integumentary system.</i>								
Abcessus		1	1					1
Acne	1		1					10
VIOLENT DISEASES AND DEATHS.								
Contusio		1	1					4
Stremma		1					1	24
Vulnus contusum		1		1				1
Total	1	19	16	2			1	157

NAVY-YARD, PHILADELPHIA.

SUMMARY, 1883.

Classification of diseases.	Remaining from last year.	Admitted.	Discharged to duty.	Invalided.		Died.	Remaining at the end of the year.	Total number of sick-days.
				To hospital.	From service.			
Zymotic diseases.....	—	36	30	6	—	—	—	104
Constitutional diseases.....	—	20	16	4	—	—	—	84
Diseases of the nervous system.....	—	13	11	2	—	—	—	50
Diseases of the eye.....	—	8	8	—	—	—	—	69
Diseases of the ear.....	—	1	1	—	—	—	—	2
Diseases of the circulatory system.....	—	1	1	—	—	—	—	4
Diseases of the respiratory system.....	—	37	29	9	—	—	1	123
Diseases of the digestive system.....	—	52	50	1	—	—	1	153
Diseases of the genito-urinary system.....	—	6	5	1	—	—	—	58
Diseases of the integumentary system.....	—	3	3	—	—	—	—	12
Poisons.....	—	21	21	—	—	—	—	49
Violent diseases and deaths.....	—	22	18	4	—	—	—	61
Total.....	—	220	193	25	—	—	2	772

DETAILED STATEMENT.

Diseases.	Remaining from last quarter.	Admitted.	Discharged to duty.	Invalided.		Died.	Continued to next quarter.	Total number of sick-days.
				To hospital.	From service.			
GENERAL DISEASES.								
Zymotic diseases.								
Febris continua simplex.....		5	4	1				13
Febris intermittens.....		30	25	5				80
Vaccina.....		1	1					11
Constitutional diseases.								
Adynamia.....		1	1					16
Anæmia.....		1	1					2
Lumbago.....		1	1					3
Rheumatismus acutus.....		4	3	1				11
Rheumatismus chronicus.....		9	8	1				33
Syphilis consecutiva.....		4	2	2				19
LOCAL DISEASES.								
Diseases of the nervous system.								
Cephalalgia.....		2	2					11
Epilepsia.....		1		1				5
Neuralgia.....		2	2					2
Pleurodynia.....		8	7	1				32
Diseases of the eye.								
Conjunctivitis.....		8	8					69
• Diseases of the ear.								
Otorrhœa.....		1	1					2
Diseases of the circulatory system.								
Aneurysma.....		1	1					4

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DETAILED STATEMENT—Continued.

Diseases.	Remaining from last quarter.	Admitted.	Discharged to duty.	Invalided.		Died.	Continued to next quarter.	Total number of sick-days.
				To hospital.	From service.			
LOCAL DISEASES—Continued.								
<i>Diseases of the respiratory system.</i>								
Asthma.....		1		1				2
Bronchitis acuta.....		1	1					4
Bronchitis chronica.....		2	1	1				8
Catarrhus bronchialis.....		24	20	3			1	80
Catarrhus nasalis.....		1	1					2
Hæmoptysis.....		2	2					5
Laryngitis.....		4	4					16
Pleuritis.....		2		2				6
<i>Diseases of the digestive system.</i>								
Cholera morbus.....		4	4					9
Colica.....		2	2					3
Congestio hepatis.....		4	4					12
Constipatio.....		2	1	1				3
Diarrhœa acuta.....		19	19					55
Dysenteria acuta.....		1	1					1
Dyspepsia.....		2	2					3
Gastrodynia.....		5	5					18
Hæmatemesis.....		3	2				1	17
Hæmorrhœa.....		2	2					5
Hepatitis acuta.....		3	3					7
Hepatitis chronica.....		2	2					13
Pharyngitis.....		2	2					6
Tonsillitis.....		1	1					1
<i>Diseases of the genito-urinary system.</i>								
Chancroides.....		1	1					32
Gonorrhœa.....		4	4					25
Phymosis.....		1		1				1
<i>Diseases of the integumentary system.</i>								
Anthrax.....		1	1					4
Furunculus.....		1	1					4
Paronychia.....		1	1					4
POISONS.								
Alcoholismus acutus.....		7	7					13
Alcoholismus chronicus.....		11	11					29
Ebrietas.....		3	3					7
VIOLENT DISEASES AND DEATHS.								
Ambustio.....		1		1				1
Contusio.....		11	11					38
Fractura.....		2		2				2
Stromma.....		6	5	1				11
Vulnus contusum.....		1	1					9
Vulnus laceratum.....		1	1					3
Total.....		220	193	25			2	772

REPORT OF THE SURGEON-GENERAL OF THE NAVY. 195

NAVY-YARD, WASHINGTON.

SUMMARY, 1883.

Classification of diseases.	Remaining from last year.	Admitted.	Discharged to duty.	Invalided.		Died.	Remaining at the end of the year.	Total number of sick-days.
				To hospital.	From service.			
Zymotic diseases.....		18	14	4				141
Constitutional diseases.....		7	2	4			1	30
Diseases of the nervous system.....		5	5					23
Diseases of the circulatory system.....		4	4					24
Diseases of the respiratory system.....		6	4	2				39
Diseases of the digestive system.....	1	4	4	1				24
Diseases of the genito-urinary system.....		8	5	3				72
Diseases of the integumentary system.....		4	3	1				16
Poisons.....		3	3					9
Violent diseases and deaths.....		6	3	3				35
Total.....	1	65	47	18			1	413

DETAILED STATEMENT.

Diseases.	Remaining from last quarter.	Admitted.	Discharged to duty.	Invalided.		Died.	Continued to next quarter.	Total number of sick-days.
				To hospital.	From service.			
GENERAL DISEASES.								
<i>Zymotic diseases.</i>								
Febricula		3	2	1				10
Febris continua simplex		1		1				1
Febris intermittens		14	12	2				130
<i>Constitutional diseases.</i>								
Lumbago		1					1	10
Rheumatismus acutus		2		2				2
Syphilis primitiva		3	1	2				16
Torticollis		1	1					2
LOCAL DISEASES.								
<i>Diseases of the nervous system.</i>								
Neuralgia		4	4					18
Vertigo		1	1					5
<i>Diseases of the circulatory system.</i>								
Hypertrophica cordis		1	1					5
Palpitatio		3	3					19
<i>Diseases of the respiratory system.</i>								
Asthma		1		1				4
Bronchitis acuta		2	2					8
Catarrhus bronchialis		2	2					16
Laryngitis		1		1				1
<i>Diseases of the digestive system.</i>								
Colica		2	2					10
Congestio hepatis		1		1				0
Diarrhoea acuta		1	1					10
Pharyngitis	1		1					

196 REPORT OF THE SURGEON-GENERAL OF THE NAVY.

DETAILED STATEMENT—Continued.

Diseases.	Remaining from last quarter.	Admitted.	Discharged to duty.	Invalided.		Died.	Continued to next quarter.	Total number of sick-days.
				To hospital.	From service.			
LOCAL DISEASES—Continued.								
<i>Diseases of the genito-urinary system.</i>								
Chancroids		2		2				5
Gonorrhœa.....		5	5					65
Orchitis.....		1		1				1
<i>Diseases of the integumentary system.</i>								
Abscesses.....		3	3					15
Eczema.....		1		1				1
POISONS.								
Alcoholismus acutus.....		3	3					9
VIOLENT DISEASES AND DEATHS.								
Contusio		1	1					2
Strenua.....		3	2	1				29
Vulnus contusum.....		1		1				3
Vulnus punctum.....		1		1				1
Total.....	1	65	47	18			1	413

NAVY-YARD, NORFOLK.

SUMMARY, 1883.

Classification of diseases.	Remaining from last year.	Admitted.	Discharged to duty.	Invalided.		Died.	Remaining at the end of the year.	Total number of sick-days.
				To hospital.	From service.			
Zymotic diseases		33	25	8				209
Constitutional diseases		25	16	9				101
Diseases of the nervous system		4	2	12				22
Diseases of the eye		1		1				2
Diseases of the circulatory system		4	2	12				12
Diseases of the respiratory system		14	10	4				40
Diseases of the digestive system		39	34	5				127
Diseases of the genito-urinary system		8	7	1				86
Diseases of the integumentary system		8	5	3				23
Poisons		7	7					20
Violent diseases and deaths	1	15	12	3			1	67
Total	1	158	120	38			1	721

DETAILED STATEMENT.

Diseases.	Remaining from last quarter.	Admitted.	Discharged to duty.	Invalided.		Died.	Continued to next quarter.	Total number of sick-days.
				To hospital.	From service.			
GENERAL DISEASES.								
Zymotic diseases.								
Erysipelas		2	1	1				8
Febris enterica		1		1				1
Febris intermittens		23	17	6				78
Vaccina		7	7					122
Constitutional diseases.								
Adynamia		2	1	1				3
Anæmia		1	1					4
Lumbago		2	2					8
Rheumatismus acutus		11	9	2				39
Rheumatismus chronicus		3	3					31
Rheumatismus gonorrhoeicus		1		1			2	2
Syphilis consecutiva		5		5				14
LOCAL DISEASES.								
Diseases of the nervous system.								
Cephalalgia		1	1					1
Neuralgia		2	1	1				14
Pleurodynia		1		1				7
Diseases of the eye.								
Keratitis		1		1				2
Diseases of the circulatory system.								
Morbi valvularum cordis		1	1					6
Palpitatio		2	1	1				5
Varix		1		1				1
Diseases of the respiratory system.								
Asthma		1	1					2
Bronchitis acuta		3	3					11
Bronchitis chronica		1		1				1
Catarrhus bronchialis		4	4					12
Hæmoptysis		1		1				8
Laryngitis		3	2	1				5
Pneumonia		1		1				1
Diseases of the digestive system.								
Colica		2	2					9
Diarrhœa acuta		18	16	2				43
Diarrhœa chronica		1		1				1
Dyspepsia		1	1					2
Fistula ani		1	1					10
Hæmorrhoids		3	1	2				24
Pharyngitis		2	2					2
Tonsillitis		11	11					36
Diseases of the genito-urinary system.								
Chancroides		1	1					54
Gonorrhœa		6	5	1				40
Urethra strictura		1	1					4
Diseases of the integumentary system.								
Abcessus		2	1	1				2
Eczema		1		1				1
Forunculus		3	3					15
Scabies		1		1				1
Ulcus		1	1					4
POISONS.								
Alcoholismus acutus		7	7					20

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DETAILED STATEMENT—Continued.

Diseases.	Remaining from last quarter.	Admitted.	Discharged to duty.	Invalided.		Died.	Continued to next quarter.	Total number of sick-days.
				To hospital.	From service.			
VIOLENT DISEASES AND DEATHS.								
Abrasio.....		1	1					4
Explosio.....	1	4	4	1				19
Fractura.....		1		1				1
Strenna.....		3	3					14
Vulnus contusum.....		4	2	1			1	18
Vulnus incisum.....		1	1					2
Vulnus punctum.....		1	1					9
Total.....	1	158	120	38			1	721

NAVY-YARD, MARE ISLAND.

SUMMARY, 1883.

Classification of diseases.	Remaining from last year.	Admitted.	Discharged to duty.	Invalided.		Died.	Remaining at the end of the year.	Total number of sick-days.
				To hospital.	From service.			
Zymotic diseases.....		7	6	1				41
Constitutional diseases.....		11	10		1			147
Diseases of the nervous system.....		6	5		1			125
Diseases of the eye.....	1	1	2					13
Diseases of the ear.....		1		1				2
Diseases of the teeth.....		1	1					2
Diseases of the circulatory system.....		2	2					39
Diseases of the respiratory system.....	1	20	17	4				150
Diseases of the digestive system.....		19	16	2			1	52
Diseases of the genito-urinary system.....		5	4	1				95
Diseases of the integumentary system.....		4	4					39
Poisons.....		4	4					16
Violent diseases and deaths.....		22	22					138
Total.....	2	103	93	9	2		1	859

DETAILED STATEMENT.

Diseases.	Remaining from last quarter.	Admitted.	Discharged to duty.	Invalided.		Died.	Continued to next quarter.	Total number of sick days.						
				To hospital.	From service.									
GENERAL DISEASES.														
Zymotic diseases.														
Febris continua simplex.....		2	2					13						
Febris enterica.....		1		1				2						
Febris intermittens.....		3	3					16						
Febris remittens.....		1	1					10						
Constitutional diseases.														
Lumbago.....		6	6					53						
Rheumatismus acutus.....		2	2					12						
Syphilis consecutiva.....		2	2		1			82						

REPORT OF THE SURGEON-GENERAL OF THE NAVY. 199

DETAILED STATEMENT—Continued.

Diseases.	Remaining from last quarter.	Admitted.	Discharged to duty.	Invalided.		Died.	Continued to next quarter.	Total number of sick-days.
				To hospital.	From service.			
LOCAL DISEASES.								
<i>Diseases of the nervous system.</i>								
Cephalalgia.....		3	3					13
Epilepsia.....		1	1					3
Insolatio.....		1	1					35
Melancholia.....		1			1			74
<i>Diseases of the eye.</i>								
Amaurosis.....	1		1					6
Conjunctivitis.....		1	1					4
<i>Diseases of the ear.</i>								
Otorrhœa.....		1		1				2
<i>Diseases of the teeth.</i>								
Odontalgia.....		1	1					2
<i>Diseases of the circulatory system.</i>								
Angina pectoris.....		1	1					6
Varix.....		1	1					36
<i>Diseases of the respiratory system.</i>								
Asthma.....		5	3	2				20
Bronchitis acuta.....	1	6	7					54
Catarrhus bronchialis.....		5	5					15
Epistaxis.....		1	1					2
Laryngitis.....		1	1					2
Phthisis pneumonica chronica.....		2	2					57
<i>Diseases of the digestive system.</i>								
Abcessus of liver.....		1		1				1
Colica.....		4	4					9
Constipatio.....		1	1					1
Diarrhœa acuta.....		3	3					5
Dyspepsia.....		4	3				1	11
Hepatitis chronica.....		2	2					12
Peritonitis.....		1		1				2
Pharyngitis.....		2	2					5
Tonsillitis.....		1	1					6
<i>Diseases of the genito-urinary system.</i>								
Albuminuria.....		1	1					4
Gonorrhœa.....		2	2					12
Hæmaturia.....		1		1				74
Orchitis.....		1	1					5
<i>Diseases of the integumentary system.</i>								
Abcessus.....		1	1					8
Eczema.....		1	1					23
Furunculus.....		1	1					3
Ulcus.....		1	1					6
POISONS.								
Alcoholismus acutus.....		4	4					16
VIOLENT DISEASES AND DEATHS.								
Abrasio.....		1	1					5
Contusio.....		5	5					26
Strenua.....		7	7					37
Vulnus contusum.....		5	5					37
Vulnus incisum.....		2	2					13
Vulnus laceratum.....		1	1					9
Vulnus punctum.....		1	1					11
Total.....	2	103	93	9	2		1	859

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NAVY-YARD, PENSACOLA.

SUMMARY, 1883.

Classification of diseases.	Remaining from last year.	Admitted.	Discharged to duty.	Invalided.		Died.	Remaining at the end of the year.	Total number of sick-days.
				To hospital.	From service.			
Zymotic diseases.....		14	6	6		2		63
Constitutional diseases.....		10	6	3		1		49
Diseases of the nervous system.....		5	3	2				11
Diseases of the respiratory system.....	1	7	8					132
Diseases of the digestive system.....		7	6	1				76
Diseases of the genito-urinary system.....		1	1					11
Diseases of the integumentary system.....		2	2					22
Diseases of the absorbent system.....		3	3					18
Poisons.....		3	3					12
Violent diseases and deaths.....	1	5	6					83
Total.....	2	57	44	12		3		475

DETAILED STATEMENT.

Diseases.	Remaining from last quarter.	Admitted.	Discharged to duty.	Invalided.		Died.	Continued to next quarter.	Total number of sick-days.
				To hospital.	From service.			
GENERAL DISEASES.								
<i>Zymotic diseases.</i>								
Febris continua simplex.....		1	1					4
Febris flava.....		8	1	5		2		33
Febris intermittens.....		5	4	1				25
<i>Constitutional diseases.</i>								
Adynamia.....		2	2					15
Anæmia.....		1		1				2
Lumbago.....		1	1					2
Rheumatismus chronicus.....		3	3					20
Syphilis primitiva.....		2		2				4
Tuberculosis.....		1				1		6
LOCAL DISEASES.								
<i>Diseases of the nervous system.</i>								
Cephalalgia.....		4	2	2				8
Pleurodynia.....		1	1					3
<i>Diseases of the respiratory system.</i>								
Asthma.....		5	5					24
Bronchitis acuta.....	1	1	2					105
Catarrhus bronchialis.....		1	1					3
<i>Diseases of the digestive system.</i>								
Diarrhoea acuta.....		4	4					17
Dysenteria acuta.....		2	1	1				56
Dyspepsia.....		1	1					3
<i>Diseases of the genito-urinary system.</i>								
Colica nephritica.....		1	1					11

DETAILED STATEMENT—Continued.

Diseases.	Remaining from last quarter.	Admitted.	Discharged to duty.	Invalided.		Died.	Continued to next quarter.	Total number of sick-days.
				To hospital.	From service.			
LOCAL DISEASES—Continued.								
<i>Diseases of the integumentary system.</i>								
Abcessus		1	1					14
Herpes		1	1					8
<i>Diseases of the absorbent system.</i>								
Adenitis		3	3					18
POISONS.								
Alcoholismus acutus		1	1					6
Alcoholismus chronicus		2	2					6
VIOLENT DISEASES AND DEATHS.								
Abrasio	*	1	1					6
Contusio		1	1					17
Fractura	1		1					34
Strenima		1	1					8
Vulnus contusum		2	2					17
Total	2	57	44	12		3		475

SANITARY CONDITION
OF
ACADEMY, BARRACKS, AND STATIONS.

ACADEMY, BARRACKS, AND STATIONS.

NAVAL ACADEMY.

SUMMARY, 1883.

Classification of diseases.	Remaining from last year.	Admitted.	Discharged to duty.	Invalided.		Died.	Remaining at the end of the year.	Total number of sick-days.
				To hospital.	From service.			
Zymotic diseases.....		88	88					445
Constitutional diseases.....	1	59	54	4			2	505
Diseases of the nervous system.....	1	110	110	1				254
Diseases of the eye.....		36	36					264
Diseases of the ear.....		9	9					30
Diseases of the teeth.....		17	17					30
Diseases of the circulatory system.....		6	5			1		65
Diseases of the respiratory system.....	1	216	212	1			4	812
Diseases of the digestive system.....	1	240	239			1	1	838
Diseases of the genito-urinary system.....	1	19	19				1	314
Diseases of the locomotive system.....		7	7					37
Diseases of the integumentary system.....	1	35	35				1	229
Diseases of the absorbent system.....		1	1					13
Poisons.....		7	7					24
Violent diseases and deaths.....	1	125	123				3	762
Total.....	7	975	962	6		2	12	4,622

REPORT OF VACCINATION.

	Successful.	Unsuccessful.
No evidence of previous examination.....	96	170
Presenting good cicatrices.....	61	118
Evidence of former attack of small-pox.....	1	5

NOTE.—Bovine virus used.

DETAILED STATEMENT.

Diseases.	Remaining from last quarter.	Admitted.	Discharged to duty.	Invalided.		Died.	Continued to next quarter.	Total number of sick-days.
				To hospital.	From service.			
GENERAL DISEASES.								
Zymotic diseases.								
Erysipelas.....		4	4					51
Febricula.....		4	4					10
Febris continua simplex.....		7	7					17
Febris intermittens.....		68	68					315
Febris remittens.....		1	1					24
Parotitis.....		1	1					13
Vaccine.....		3	3					15

DETAILED STATEMENT—Continued.

Diseases.	Remaining from last quarter.	Admitted.	Discharged to duty.	Invalided.		Died.	Continued to next quarter.	Total number of sick-days.
				To hospital.	From service.			
GENERAL DISEASES—Continued.								
<i>Constitutional diseases.</i>								
Adynamia		13	12				1	26
Lumbago		8	8					67
Podagra		2	2					17
Rheumatismus acutus		5	4				1	124
Rheumatismus chronicus		21	20	1				135
Rheumatismus gonorrhoeicus		1	1					9
Rheumatismus subacutus		1	1					9
Syphilis consecutiva	1	7	5	3				82
Syphilis primitiva		1	1					36
LOCAL DISEASES.								
<i>Diseases of the nervous system.</i>								
Cephalalgia		73	73					133
Lypothemia		1	1					1
Melancholia	1			1				22
Myalgia		1	1					5
Neuralgia		21	21					42
Pleurodynia		2	2					5
Vertigo		12	12					47
<i>Diseases of the eye.</i>								
Asthenopia		1	1					1
Conjunctivitis		32	32					253
Fistula lachrymalis		1	1					6
Hordeolum		1	1					1
Keratitis		1	1					3
<i>Diseases of the ear.</i>								
Otalgia		5	5					11
Otitis		4	4					19
<i>Diseases of the teeth.</i>								
Odontalgia		15	15					27
Parulis		2	2					3
<i>Diseases of the circulatory system.</i>								
Hypertrophica cordis		2	2					7
Morbi valvularum cordis		1				1		59
Palpitatio		2	2					8
Syncope		1	1					2
<i>Diseases of the respiratory system.</i>								
Asthma		2	2					26
Bronchitis acuta		4	3				1	26
Catarrhus bronchialis		202	199				3	629
Catarrhus nasalis		2	2					4
Hæmoptysis		1	1					26
Laryngitis		1	1					2
Phthisis pneumonica chronica	1	1	1	1				16
Pleuritis		2	2					37
Pneumonia		1	1					44
<i>Diseases of the digestive system.</i>								
Cholera morbus		2	2					9
Colica		22	22					51
Congestio hepatis		6	6					15
Constipatio		11	11					20
Diarrhoea acuta		36	36					89
Dysenteria acuta		1				1		2
Dyspepsia		29	29					77
Enteritis		1	1					3
Fistula ani		2	2					27
Gastritis		2	2					29

DETAILED STATEMENT—Continued.

Diseases.	Remaining from last quarter.	Admitted.	Discharged to duty.	Invalided.		Died.	Continued to next quarter.	Total number of sick days.
			To hospital.	From service.				
LOCAL DISEASES—Continued.								
<i>Diseases of the digestive system—Continued.</i>								
Gastro enteritis.....		1	1					4.
Gastrodynia.....		1	1					1
Hæmorrhoids.....		6	6					33.
Hernia.....		1	1					40
Pharyngitis.....	1	63	64					189.
Rhagadesani.....		5	5					65
Tonsillitis.....		51	50				1	200.
<i>Diseases of the genito-urinary system.</i>								
Balanitis.....		1	1					49
Chancroides.....		6	6					102.
Colica nephritica.....		1	1					3.
Cystitis.....		1	1					4
Epididymitis.....		2	2					41
Gonorrhœa.....	1	6	6				1	109.
Ischuria.....		1	1					3
Orchitis.....		1	1					3
<i>Diseases of the locomotive system.</i>								
Myalgia.....		2	2					5.
Synovitis.....		5	5					32
<i>Diseases of the integumentary system.</i>								
Abscessus.....		13	12				1	96.
Clavus.....		1	1					2
Dermatitis venenatum.....		1	1					9.
Furunculus.....		7	7					29.
Herpes.....		1	1					5
Lichen.....		1	1					4
Pediclei pubis.....		5	5					18
Ulcus.....	1	5	6					65.
Ungula involutus.....		1	1					1
<i>Diseases of the absorbent system.</i>								
Adenitis.....		1	1					13.
POISONS.								
Alcoholismus acutus.....		6	6					17.
Delirium tremens.....		1	1					7
VIOLENT DISEASES AND DEATHS.								
Abrasio.....		4	4					14
Ambustio.....		5	5					36
Contusio.....		47	45				2	182
Fractura.....		7	6				1	193.
Strenua.....	1	32	32					117
Vulnus contusum.....		9	9					32
Vulnus incisum.....		6	6					33.
Vulnus laceratum.....		11	11					77
Vulnus punctum.....		4	4					35
Vulnus sclopetarium.....		1	1					43.
Total.....	7	975	962	6		2	12	4,622.

Surgeon T. C. Walton reports the following case of interest:

F. M. R., naval cadet, aged eighteen, native of Pennsylvania, presented himself as suffering from retention of urine. A No. 7 red gum, flexible (Jacques) catheter was introduced, but would not pass into the bladder. Then a No. 5 of the same make was tried, and as it was passing the triangular ligament the patient said he felt as though it was pushing something before it. No abnormal sensation was communicated to the

hand of the operator and no unusual discomfort was experienced by the patient. The instrument was clasped by the urethral muscles and considerable manipulation was necessary to pass it into the bladder. After evacuating apparently normal urine the catheter was withdrawn and it was seen to be broken, about 2½ inches of the distal end remaining behind. A few minutes later the patient passed a good stream of urine. No unusual pain was felt at any time, and there was no escape of blood or sanious urine to indicate laceration. Patient expressed himself relieved and said he felt no discomfort except a little soreness in the urethra. He was kept under observation, given large quantities of flaxseed tea, and directed to retain his urine as long as possible, and when called to urinate to do so standing, with the body leaning forward. On the evening of the 12th of December, having retained his urine for nine hours, he passed easily, soon after beginning to micturate in the position advised, the fragment of the catheter left in the bladder fifty-four hours before. The patient states that each time he had urinated since its entrance he had felt the fragment apparently start to leave the bladder and then fall back. The foreign body when evacuated was clean and unacted upon. The catheter used was a very flexible gum tube colored red and known as stated, as Jacques' catheter, and was furnished to the Academy about a year ago. These instruments when new are soft, flexible, strong, but rapidly deteriorate becoming hard, brittle, and untrustworthy, and what is more, being very deceptive, appearing to be in good condition when they break on the slightest provocation.

TORPEDO STATION, NEWPORT.

SUMMARY, 1883.

Classification of diseases.	Remaining from last year.	Admitted.	Discharged to duty.	Invalided.		Died.	Remaining at the end of the year.	Total number of sick-days.
				To hospital.	From service.			
Zymotic diseases.....	2	1	.....	.....	1	.....	4
Constitutional diseases.....	23	3	.....	.....	.....	.....	9
Diseases of the nervous system.....	1	1	.....	.....	.....	.....	3
Diseases of the eye.....	6	6	.....	.....	.....	.....	65
Diseases of the respiratory system.....	14	14	.....	.....	.....	.....	45
Diseases of the digestive system.....	19	19	.....	.....	.....	.....	93
Diseases of the genito-urinary system.....	2	2	.....	.....	.....	.....	10
Diseases of the integumentary system.....	4	4	.....	.....	.....	.....	16
Poisons.....	2	2	.....	.....	.....	.....	8
Violent diseases and deaths.....	7	7	.....	.....	.....	.....	32
Total.....	60	59	.....	.....	1	.....	286

DETAILED STATEMENT.

Diseases.	Remaining from last quarter.	Admitted.	Discharged to duty.	Invalided.		Died.	Continued to next quarter.	Total number of sick-days.
				To hospital.	From service.			
GENERAL DISEASES.								
<i>Zymotic diseases.</i>								
Febricula.....		1	1					3
Pyæmia.....		1				1		1
<i>Constitutional diseases.</i>								
Rheumatismus acutus.....		1	1					4
Rheumatismus chronicus.....		2	2					5
LOCAL DISEASES.								
<i>Diseases of the nervous system.</i>								
Cephalalgia.....		1	1					3

DETAILED STATEMENT—Continued.

Diseases.	Remaining from last quarter.	Admitted.	Discharged to duty.	Invalided.		Died.	Remaining at the end of the year.	Total number of sick days.
				To hospital.	From service.			
LOCAL DISEASES—Continued.								
<i>Diseases of the eye.</i>								
Conjunctivitis		5	5					60
Sclerolitis		1	1					5
<i>Diseases of the respiratory system.</i>								
Bronchitis acuta		2	2					5
Catarrhus bronchialis		12	12					40
<i>Diseases of the digestive system.</i>								
Cholera morbus		1	1					2
Colica		3	3					6
Diarrhoea acuta		7	7					20
Dyspepsia		3	3					17
Gastritis		2	2					14
Hæmorrhoids		1	1					3
Tonsillitis		2	2					33
<i>Diseases of the genito-urinary system.</i>								
Albuminuria		2	2					10
<i>Diseases of the integumentary system.</i>								
Ecthyma		1	1					4
Furunculus		3	3					12
POISONS.								
Alcoholismus acutus		2	2					8
VIOLENT DISEASES AND DEATHS.								
Amblyotio		1	1					5
Contusio		1	1					1
Valvula contusum		4	4					19
Valvula incisum		1	1					7
Total		60	59			1		287

MARINE BARRACKS, BROOKLYN.

SUMMARY 1883.

Classification of diseases.	Remaining from last year.	Admitted.	Discharged to duty.	Invalided.		Died.	Remaining at the end of the year.	Total number of sick days.
				To hospital.	From service.			
Zymotic diseases	1	70	65	6				314
Constitutional diseases	2	45	41	6				226
Diseases of the nervous system		21	16	4			1	73
Diseases of the eye		8	8					60
Diseases of the ear		2	1	1				11
Diseases of the teeth		1	1					1
Diseases of the circulatory system		6	2	4				12
Diseases of the respiratory system		53	28	5			2	156
Diseases of the digestive system	2	82	74	2			1	346
Diseases of the genito-urinary system	1	45	30	15			1	362
Diseases of the integumentary system	3	21	23	1				204
Diseases of the absorbent system		7	5	2				54
Poisons		10	8	2				20
Violent diseases and deaths	1	61	55	4			3	455
Total	10	412	362	52			8	2,294

210 REPORT OF THE SURGEON-GENERAL OF THE NAVY.

DETAILED STATEMENT.

Diseases.	Remaining from last quarter.	Admitted.	Discharged to duty.	Invalided.		Died.	Continued to next quarter.	Total number of sick-days.
				To hospital.	From service.			
GENERAL DISEASES.								
Zymotic diseases.								
Febricula.....		4	4					9
Febris continua simplex.....		1		1				1
Febris intermittens.....	1	50	48	3				211
Febris remittens.....		8	1	2				15
Vaccina.....		12	12					79
Constitutional diseases.								
Anæmia.....		2	2					13
Rheumatismus acutus.....		12	10	2				43
Rheumatismus chronicus.....		24	23	1				139
Syphilis consecutiva.....		3	2	1				9
Syphilis primitiva.....	2	4	4	2				23
LOCAL DISEASES.								
Diseases of the nervous system.								
Apoplexia.....		1	1					1
Cephalalgia.....		2	2					3
Dementia.....		2		2				2
Epilepsia.....		3	1	1			1	6
Mania.....		1		1				1
Neuralgia.....		11	11					56
Vertigo.....		1	1					3
Diseases of the eye.								
Conjunctivitis.....		8	8					60
Diseases of the ear.								
Otorrhœa.....		2	1	1				11
Diseases of the teeth.								
Odontalgia.....		1	1					1
Diseases of the circulatory system.								
Angina pectoris.....		1		1				2
Morbi valvularum cordis.....		2	1	1				2
Palpitatio.....		2		2				7
Syncope.....		1	1					1
Diseases of the respiratory system.								
Asthma.....		1	1					4
Bronchitis acuta.....		1	1					6
Bronchitis chronica.....		2	2					9
Catarrhus bronchialis.....		10	18				1	91
Catarrhus nasalis.....		1	1					2
Hæmoptysis.....		1	1					9
Laryngitis.....		4	3				1	18
Phthisis pneumonica acuta.....		1		1				2
Phthisis pneumonica chronica.....		1		1				6
Pleuritis.....		2	2					11
Diseases of the digestive system.								
Cholera morbus.....		9	9					23
Colica.....		4	4					20
Constipatio.....		9	9					24
Diarrhœa acuta.....		25	25					94
Dysenteria acuta.....		1	1					5
Dyspepsia.....		2	1	1				16
Hæmorrhœis.....		2	2					23
Hernia.....		3	1	2				5
Pharyngitis.....		5	4	1				30
Tonsillitis.....	2	22	22	1			1	107
Diseases of the genito-urinary system.								
Balanitis.....		2	2					10
Chancroides.....		10	6	4				77
Cystitis.....		4	1	3				18
Gonorrhœa.....		20	14	5			1	205
Hydrocele.....		1		1				3

REPORT OF THE SURGEON-GENERAL OF THE NAVY. 211

DETAILED STATEMENT—Continued.

Diseases.	Remaining from last quarter.	Admitted.	Discharged to duty.	Invalided.		Died.	Continued to next quarter.	Total number of sick-days.
				To hospital.	From service.			
LOCAL DISEASES—Continued.								
Diseases of the nervous system—Continued.								
Orophitis	1	5	5	1				36
Paraphymosis		1		1				5
Urethra strictura		1	1					5
Varicocele		1	1					4
Diseases of the integumentary system.								
Abcessus		7	7					90
Anthrax		3	3					21
Eczema	1	1	1	1				44
Erythema		4	4					13
Furunculus		4	4					18
Impetigo		1	1					13
Paronychia	1		1					1
Periostitis		1	1					2
Ulcer	1		1					2
Diseases of the absorbent system.								
Adenitis		7	5	2				54
POISONS.								
Alcoholismus acutus		8	7	1				16
Delirium tremens		1		1				1
Venena		1	1					3
VIOLENT DISEASES AND DEATHS.								
Abrasio		11	11					63
Contusio		16	14				2	84
Fractura		3	2	1				26
Luxatio		1	1					6
Stremma	1	13	10	3			1	155
Subluxatio		2	2					12
Vulnus contusum		8	8					55
Vulnus incisum		4	4					40
Vulnus laceratum		3	3					14
Total	10	412	362	52			8	2,294

MARINE BARRACKS, WASHINGTON, D. C.

SUMMARY, 1883.

Classification of diseases.	Remaining from last year.	Admitted.	Discharged to duty.	Invalided.		Died.	Remaining at the end of the year.	Total number of sick-days.
				To hospital.	From service.			
Zymotic diseases		8	7	1				60
Constitutional diseases	1	12	9	4				84
Diseases of the nervous system		1	1	1				7
Diseases of the eye		1	2					22
Diseases of the circulatory system		1	1					1
Diseases of the respiratory system		7	6	1				21
Diseases of the digestive system		25	23	2				94
Diseases of the genito-urinary system		2	1				1	13
Diseases of the integumentary system		4	4					26
Poisons		1	1					4
Violent diseases and deaths		10	9	1				106
Total	1	74	64	10			1	438

212 REPORT OF THE SURGEON-GENERAL OF THE NAVY.

DETAILED STATEMENT.

Diseases.	Remaining from last quarter.	Admitted.	Discharged to duty.	Invalided.		Died.	Continued to next quarter.	Total number of sick-days.
				To hospital.	From service.			
GENERAL DISEASES.								
Zymotic diseases.								
Febris continua simplex		2	1	1				4
Febris intermittens		1	1					3
Vaccina		5	5					53
Constitutional diseases.								
Anæmia		1		1				1
Rheumatismus chronicus	1	9	7	3				69
Syphillis consecutiva		2	1	1				14
LOCAL DISEASES.								
Diseases of the nervous system.								
Cephalalgia		1	1					6
Epilepsia		1		1				1
Diseases of the eye.								
Iritis		2	2					22
Diseases of the circulatory system.								
Morbid valvularum cordis		1	1					1
Diseases of the respiratory system.								
Bronchitis chronica		1		1				3
Catarrhus bronchialis		6		6				18
Diseases of the digestive system.								
Constipatio		9	9					44
Diarrhœa acuta		10	10					32
Hæmorrhoids		1	1					4
Pharyngitis		1	1					4
Tonsillitis		3	2	1				9
Vermes		1		1				1
Diseases of the genito-urinary system.								
Chancroides		1					1	11
Ischuria		1	1					2
Diseases of the integumentary system.								
Furunculus		3	3					25
Herpes		1	1					1
POISONS.								
Alcoholismus acutus		1	1					4
VIOLENT DISEASES AND DEATHS.								
Contusio		5	5					37
Luxatio		1		1				8
Strumma		2	2					28
Vulnus incisum		2	2					23
Total	1	74	64	10			1	438

NAVAL DISPENSARY, WASHINGTON, D. C.

SUMMARY, 1883.

Classification of diseases.	Remaining from last year.	Admitted.	Discharged to duty.	Invalided.		Died.	Remaining at the end of the year.	Total number of sick-days.
				To hospital.	From service.			
Zymotic diseases.....		41	41					436
Constitutional diseases.....		8	7				1	92
Diseases of the nervous system.....	1	6	7					45
Diseases of the eye.....		3	3					18
Diseases of the ear.....		5	5					90
Diseases of the circulatory system.....		2	2					7
Diseases of the respiratory system.....	1	22	22			1		376
Diseases of the digestive system.....	1	29	29			1		540
Diseases of the genito-urinary system.....		5	3			1	1	101
Diseases of the locomotive system.....		1	1					15
Diseases of the integumentary system.....		11	11					127
Violent diseases and deaths.....		4	3				1	40
Total.....	3	137	134			3	3	1,887

DETAILED STATEMENT.

Diseases.	Remaining from last quarter.	Admitted.	Discharged to duty.	Invalided.		Died.	Continued to next quarter.	Total number of sick-days.
				To hospital.	From service.			
GENERAL DISEASES.								
<i>Zymotic diseases.</i>								
Catarrhus epidemicus.....		20	20					244
Febris intermittens.....		17	17					150
Febris remittens.....		1	1					5
Malarial cachexia.....		1	1					17
Morbilli.....		1	1					10
Varicella.....		1	1					10
<i>Constitutional diseases.</i>								
Adynamia.....		1	1					5
Podagra.....		4	3				1	35
Rheumatismus acutus.....		2	2					16
Rheumatismus chronicus.....		1	1					36
LOCAL DISEASES.								
<i>Diseases of the nervous system.</i>								
Cephalalgia.....		2	2					15
Mania.....		1	1					4
Neuralgia.....	1	1	2					18
Sciatica.....		2	2					8
<i>Diseases of the eye.</i>								
Conjunctivitis.....		2	2					14
Myopia.....		1	1					4
<i>Diseases of the ear.</i>								
Otitis.....		3	3					37
Surditas.....		1	1					21
Tinnitus aurium.....		1	1					32

214 REPORT OF THE SURGEON-GENERAL OF THE NAVY.

DETAILED STATEMENT—Continued.

Diseases.	Remaining from last quarter.	Admitted.	Discharged to duty.	Invalided.		Died.	Continued to next quarter.	Total number of sick days.
				To hospital.	From service.			
LOCAL DISEASES—Continued.								
<i>Diseases of the circulatory system.</i>								
Palpitation		2	2					7
<i>Diseases of the respiratory system.</i>								
Asthma		2	2					17
Bronchitis acuta	1	10	11					75
Bronchitis chronica		1	1					78
Catarrhus bronchialis		1	1					4
Catarrhus nasalis		1	1					2
Laryngitis		2	2					36
Phthisis pneumonica chronica		2	1			1		144
Pleuritis		1	1					3
Pneumonia		2	2					17
<i>Diseases of the digestive system.</i>								
Ascites		1	1					18
Cholera morbus		2	2					16
Cirrhosis hepatis		1	1					10
Constipatio		3	3					76
Diarrhoea acuta		4	4					19
Diarrhoea chronica		1	1					3
Dysentery acuta		3	3					30
Dysentery chronica		1	1					14
Dyspepsia	1	5	5			1		235
Fistula ani		1	1					48
Hæmorrhoids		1	1					33
Pharyngitis		3	3					27
Tonsillitis		3	3					11
<i>Diseases of the genito-urinary system.</i>								
Albuminuria		3	1			1	1	91
Colica renalis		1	1					2
Orchitis		1	1					6
<i>Diseases of the locomotive system.</i>								
Synovitis		1	1					15
<i>Diseases of the integumentary system.</i>								
Eczema		1	1					17
Furunculus		2	2					17
Tinea		2	2					19
Ulcus		4	4					63
Urticaria		2	2					11
VIOLENT DISEASES AND DEATHS.								
Fractura		2	1				1	31
Vulnus incisum		2	2					9
Total	3	137	134			3	3	1,887

NAVAL STATION, PORT ROYAL.

SUMMARY, 1883.

Classification of diseases.	Remaining from last year.	Admitted.	Discharged to duty.	Invalided.		Died.	Remaining at the end of they ear.	Total number of sick-days.
				To hospital.	From service.			
Zymotic diseases.....		13	13					58
Diseases of the respiratory system.....		5	5					17
Diseases of the digestive system.....		3	3					12
Diseases of the integumentary system.....		1	1					4
Poisons.....		2	2					4
Violent diseases and deaths.....		1	1					7
Total.....		25	25					100

DETAILED STATEMENT.

Diseases.	Remaining from last quarter.	Admitted.	Discharged to duty.	Invalided.		Died.	Continued to next quarter.	Total number of sick-days.
				To hospital.	From service.			
GENERAL DISEASES.								
Zymotic diseases.								
Febris intermittens		11	11					45
Febris remittens		2	2					11
Diseases of the respiratory system.								
Bronchitis acuta		3	3					7
Catarrhus bronchialis		1	1					3
Pneumonia		1	1					7
Diseases of the digestive system.								
Colica		2	2					4
Tonsillitis		1	1					3
Diseases of the integumentary system.								
Furunculus		1	1					4
POISONS.								
Alcoholismus acutus		2	2					4
VIOLENT DISEASES AND DEATHS.								
Vulnus contusum		1	1					7
Total		25	25					100



REPORT ON THE MEDICAL HISTORY OF THE EMPIRE OF JAPAN.

By Medical Inspector NEWTON L. BATES, U. S. N.

The empire of Japan lies between latitude, $24^{\circ} 10'$ and 51° north; longitude, $122^{\circ} 53'$ and $156^{\circ} 36'$ east of Greenwich. The southern and western limit is the island of Lena Kuni in the Rin Kin or Loo Choo group. The northern limit, the island of Chigima in the Kuriles, but so far as foreigners and foreign concessions are concerned, the limits are Nagasaki, in latitude $32^{\circ} 44'$, and Hakodadi, in latitude $41^{\circ} 47'$ north.

The empire is composed of four large islands and a great number of smaller ones; its total length is about 1,200 miles. The breadth of the main islands from 75 to 150 miles, and the area about 160,000 square miles.

There are no large rivers, but numerous streams, deep bays, and a very irregular coast line. Chains of mountains extend from the northeast to the southwest, but from volcanic and other action are much broken and irregular. Fuji, the highest mountain, an extinct crater, has a height of 14,000 feet, and there are at least twelve other peaks from 4,000 to 8,000 feet high. The face of the country is much broken, only one-fourth of the area, or 40,000 square miles, is under cultivation, and this is probably too liberal an estimate. *

The area and area under cultivation are not considered so great by most writers. The Japan Mail, usually well informed, gives the area of Japan as about 100,000,000 acres; 13,000,000 under cultivation, of which 7,000,000 are in rice.

The cultivated area increases very slowly. This is due to the character of the country, volcanic soil, which, even in its virgin state, generally requires manure, the slow rate of increase in population (not yet determined accurately, but estimated at 0.5 per cent. annually), and to some extent the lack of facilities for transportation.

The climate, cold in the north and subtropical in the south, is, so far as the principal inhabited portions are concerned, and especially so as it affects the foreigner in the central portions of the empire, temperate and moist.

The following results of meteorological observations for 1881 are taken from the records of the United States Naval Hospital at Yokohama, and those of the Imperial Meteorological Observatory at Tokio. The distance between the two cities is less than 18 miles, and as their positions are central, and two-thirds or more of the entire foreign population of Japan reside in these cities, it is not considered necessary to dwell on the climate of other portions of the empire: †

January.—Barometer: Highest, 30.24 inches; mean of highest, 29.88 inches; lowest, 29.33 inches; mean of lowest, 29.72 inches. Thermometer: Highest, 51° F.; mean of highest, 42° F.; lowest, 25° F.; mean of lowest, 31° F. *Tokio:* Wind velocity: Mean miles in 24 hours, 145; prevailing directions, northwest to northeast. Humidity: Maximum, 96 per cent.; minimum, 41 per cent.; monthly mean, 60 per cent.; rainfall, 1.41 inches; number of days in which rain fell, 8. Snow fell twice in this month;

* Most of the data given above are from the "Empire of Japan," a pamphlet published last year by authority of the Japanese Government.

† There were seven imperial meteorological stations last year. The results are published monthly.

evaporation, 2.816 inches. Clouds (0-10): Monthly mean, 2.3. Barometer: Mean of month, 29.871 inches; monthly mean 5 years, 30.096. Thermometer: Monthly mean, 35° 9 F.; monthly mean 5 years, 36° 6 F. Humidity: Monthly mean 5 years, 69 per cent.

February.—Barometer: Highest, 30.23 inches; mean of highest, 30.04; lowest, 29.55 inches; mean of lowest, 29.93 inches. Thermometer: Highest, 60° 5 F.; mean of highest, 44° F.; lowest 26° F.; mean of lowest, 32° 1. *Tokio:* Wind velocity: Mean number of miles in 24 hours, 132; prevailing directions of winds, northwest to northeast. Humidity: Maximum, 92 per cent.; minimum, 53 per cent.; monthly mean, 67 per cent.; rainfall, 2.99 inches. Number of days in which rain fell, 10. Snow fell three times during this month; evaporation, 2.050 inches. Clouds (0-10): Monthly mean, 4.6. Barometer: Monthly mean, 30.061 inches; monthly mean 5 years, 30.069 inches. Thermometer: Monthly mean 38° 6 F.; monthly mean 5 years, 39° 5 F. Humidity: Monthly mean 5 years, 70 per cent.

March.—Barometer: Highest, 30.44 inches; mean of highest, 30.10 inches; lowest, 29.45 inches; mean of lowest, 30.02 inches. Thermometer: Highest, 60° F.; mean of highest, 47° 3 F.; lowest, 31° 5 F.; mean of lowest, 37° 3 F. *Tokio:* Wind velocity: Mean number of miles in 24 hours, 148; prevailing direction, north to east. Humidity: Maximum, 100 per cent.; minimum, 43 per cent.; monthly mean, 75 per cent.; rainfall, 6.90 inches; number of rainy days, 16. Snow fell seven times during month; evaporation, 2.408 inches. Clouds (0-10): Monthly mean, 6.2. Barometer: Monthly mean, 30.118 inches; monthly mean 5 years, 29.975 inches. Thermometer: Monthly mean, 41° 5 F.; monthly mean 5 years, 45° 8. Humidity: Monthly mean 5 years, 70 per cent.

April.—Barometer: Highest, 30.27 inches; mean of highest, 30.03 inches; lowest, 29.38 inches; mean of lowest, 29.86 inches. Thermometer: Highest, 73° F.; mean of highest, 58° 6 F.; lowest, 36° F.; mean of lowest, 47° 3 F. *Tokio:* Wind velocity: Mean number of miles in 24 hours, 211; prevailing directions, north to east and south to west. Humidity: Maximum, 100 per cent.; minimum, 42 per cent.; monthly mean, 77 per cent.; rainfall, 4.52 inches; number of rainy days, 17; evaporation, 3.572 inches. Clouds (0-10): Monthly mean, 5.9. Barometer: Monthly mean, 29.992 inches; monthly mean 5 years, 30.04 inches. Thermometer: Monthly mean 52° 09 F.; monthly mean 5 years, 54° 4. Humidity: Monthly mean for 5 years, 76 per cent.

May.—Barometer: Highest, 30.26 inches; mean of highest, 29.99 inches; lowest, 29.44 inches; mean of lowest, 29.90 inches. Thermometer: Highest, 78° F.; mean of highest, 68° 9 F.; lowest, 49° 5 F.; mean of lowest, 58° F. *Tokio:* Wind velocity: Mean number of miles in 24 hours, 162; prevailing directions, east to south and south to west. Humidity: Maximum, 100 per cent.; minimum, 33 per cent.; monthly mean, 80 per cent.; rainfall, 1.49 inches; number of rainy days, 18; evaporation, 3.909 inches. Clouds (0-10): Monthly mean, 7. Barometer: Monthly mean, 29.973 inches; monthly mean 5 years, 29.953 inches. Thermometer: Monthly mean, 62° 9 F.; monthly mean 5 years, 64° 4 F. Humidity: Monthly mean 5 years, 79 per cent.

June.—Barometer: Highest, 30.03 inches; mean of highest, 27.90 inches; lowest, 29.41 inches; mean of lowest, 29.85 inches. Thermometer: Highest, 85° 5 F.; mean of highest, 81° 6 F.; lowest, 62° 5 F.; mean of lowest, 71° 4 F. *Tokio:* Wind velocity: Mean number miles in 24 hours, 146; prevailing directions, east to south and south to west. Humidity: Maximum, 98 per cent.; minimum, 48 per cent.; monthly mean, 83 per cent.; rainfall, 9.94 inches; number rainy days, 13; evaporation, 3.82 inches. Clouds (0-10): Monthly mean, 7.4. Barometer: Monthly mean, 29.76 inches; monthly mean 5 years, 29.858 inches. Thermometer: Monthly mean, 70° 4 F.; monthly mean 5 years, 63° 8. Humidity: Monthly mean 5 years, 83 per cent.

July.—Barometer: Highest, 30.03 inches; mean of highest, 29.90 inches; lowest, 29.41 inches; mean of lowest, 29.85 inches. Thermometer: Highest, 85° 5 F.; mean of highest, 81° 6 F.; lowest, 62° 5 F.; mean of lowest, 71° 4 F. *Tokio:* Wind velocity: Mean number miles in 24 hours, 156; prevailing directions, south to west. Humidity: Maximum, 98 per cent.; minimum, 51 per cent.; monthly mean, 82 per cent.; rainfall, 3.40 inches; number of rainy days, 14; evaporation, 4.703 inches. Clouds (0-10): Monthly mean, 6.9. Barometer: Monthly mean, 29.857 inches; monthly mean 5 years, 29.832 inches. Thermometer: Monthly mean, 75° 1 F.; monthly mean 5 years, 77° 7 F. Humidity: Monthly mean for 5 years, 80.5 per cent.

August.—Barometer: Highest, 30.03 inches; mean of highest, 29.92 inches; lowest, 29.62 inches; mean of lowest, 29.88 inches. Thermometer: Highest, 89° 5 F.; mean of highest, 85° F.; lowest, 69° 5 F.; mean of lowest, 75° 4 F. *Tokio:* Wind velocity: Mean number miles in 24 hours, 143; prevailing directions, south to west. Humidity: Maximum, 99 per cent.; minimum, 47 per cent.; monthly mean, 82 per cent.; rainfall, 3.09 inches; number of rainy days, 9; evaporation, 5.938 inches. Clouds (0-30): Monthly mean, 3.2. Barometer: Monthly mean, 29.899 inches; monthly mean 5 years, 29.874 inches. Thermometer: Monthly mean, 80° F.; monthly mean 5 years, 78° 8 F. Humidity: Monthly mean for 5 years, 81 per cent.

September.—Barometer: Highest, 30.20 inches; mean of highest, 29.97 inches; low-

est, 29.31 inches; mean of lowest, 29.91 inches. Thermometer: Highest, 90° F.; mean of highest, 76° 6 F.; lowest, 57° 5 F.; mean of lowest, 68° 4 F. *Tokio*: Wind velocity, mean number of miles in 24 hours, 158; prevailing directions, various. Humidity: Maximum, 99 per cent.; minimum, 46 per cent.; monthly mean, 84 per cent.; rainfall, 11.99 inches; number of rainy days, 17; evaporation, 3.153 inches. Clouds (0-10): Monthly mean, 7.3. Barometer: Monthly mean, 29.961; monthly mean 5 years, 29.923. Thermometer: Monthly mean, 72° 8; monthly mean 5 years, 71° 7. Humidity: Monthly mean for 5 years, 84 per cent.

October.—Barometer: Highest, 30.23 inches; mean of highest, 30.02 inches; lowest, 29.50 inches; mean of lowest, 29.92 inches. Thermometer: Highest, 73° 5 F.; mean of highest 64° 9 F.; lowest, 44° 5 F.; mean of lowest, 57° F. *Tokio*: Wind velocity, mean number of miles in 24 hours, 107; prevailing directions, northwest and northeast. Humidity: Maximum, 99 per cent.; minimum, 43; monthly mean, 81 per cent.; rainfall, 4.36 inches; number of rainy days, 12; evaporation, 2.710 inches. Clouds (0-10): Monthly mean, 6.3. Barometer: Monthly mean, 30.022; monthly mean 5 years, 30.021. Thermometer: Monthly mean, 76° 5; monthly mean for 5 years, 75° 8. Humidity: Monthly mean for 5 years, 80.

November.—Barometer: Highest, 30.43 inches; mean of highest, 30.02 inches; lowest, 29.15 inches; mean of lowest, 29.88 inches. Thermometer: Highest, 69° F.; mean of highest, 57° 7 F.; lowest, 35° F.; mean of lowest, 48° F. *Tokio*: Wind velocity, mean number miles in 24 hours, 134; prevailing directions, northerly. Humidity: Maximum, 100 per cent.; minimum, 45 per cent.; monthly mean, 79 per cent.; rainfall, 8.50 inches; number of rainy days, 7; evaporation, 2.134 inches. Clouds (0-10): Monthly mean, 4.9. Barometer: Monthly mean, 30.020; monthly mean, 5 years, 29.966. Thermometer: Monthly mean, 51° 9; monthly mean 5 years, 50°. Humidity: Monthly mean for 5 years, 77 per cent.

December.—Barometer: Highest, 30.25 inches; mean of highest, 30.09 inches; lowest, 29.70 inches; mean of lowest, 29.95 inches. Thermometer: Highest, 61° 5 F.; mean of highest, 45° 5 F.; lowest, 28° F.; mean of lowest, 39° 2 F. *Tokio*: Wind velocity, mean number miles in 24 hours, 105; prevailing direction, northwest. Humidity: Maximum, 100 per cent.; minimum, 42 per cent.; monthly mean, 74 per cent.; rainfall, 3.21 inches; number of rainy days, 9; evaporation, 1.452 inches. Clouds (0-10): Monthly mean, 5.2. Barometer: Monthly mean, 30.112; monthly mean 5 years, 29.999. Thermometer: Monthly mean, 39° 8; monthly mean 5 years, 37° 9. Humidity: Monthly mean for 5 years, 69 per cent.

The times of the Yokohama observations are: Sunrise, 9 a. m., 3 p. m., and 9 p. m. The barometer is 115 feet above the level of the sea; readings not reduced. The Tokio observations are taken at 3.30 and 9.30 a. m. and p. m.; barometer reduced to 32° F. and sea level. The total rainfall for the year was, in Yokohama, 61.80 inches; in Tokio, 56.872 inches; in Nagasaki, 87.205 inches; and in Kioto, 61.711 inches.

POPULATION.

The census of 1880 gives the total population of the empire as follows:

Males.....	18,215,000
Females.....	17,714,613
Total.....	35,925,613

Tokio, the capital of the empire, in latitude 35° 40' north, has a population of 957,121;* Kioto, latitude 35° 1' north, population, 822,098; Osaka, 34° 41' north, population, 582,668.

There are several other cities with a population of over 100,000, and the tendency of the people everywhere is to congregate in cities and villages. In the rural districts isolated farm houses are not common; houses, barns, and store-rooms line the road side of the principal thoroughfares, and long, straggling villages are thus built up, frequently miles in length, and composed of a single street. In the spread of cholera, and epidemic diseases in general, the pernicious influence of this gregarious tendency has been marked. This must especially be the case

* A more recent census shows that Tokio is increasing, and now has a population of 1,100,000. Osaka has lost about 20,000.

where an open stream of water is led through the main street of a village and the water used for drinking purposes. This is a favorite practice with the Japanese, and was the case in a village in the mountains which I visited last summer. A single ditch answered the purpose of effluent supply, and to a certain extent of effluent waste. I found an expressed desire, however, on the part of the inn-keepers to do what was necessary for the sanitary improvement of their surroundings, and I was accompanied by an escort of the principal men of the village on my tour of inspection. Assurances were freely given that certain improvements would be made, but I fear that the defects will only be put out of sight and that no thorough systematic work will be done. Sanitary reform in Japan, as elsewhere, meets with indifference and evasion rather than open hostility. Government circulars and regulations on the subject of quarantine and spread of epidemics exist in abundance, and usually well adapted to their object, but their execution is carried on in a mild, indulgent, paternal way which will not do much to arrest a determined, persistent epidemic.

Epidemics would, doubtless, be more frequent in Japan if the saving of human excreta for use as manure was less general. It is not pleasant to pass the farmer on his way to the rice or wheat field with his bucket of filth suspended on either end of a coolie bar, but, in my opinion, it is more conducive to health than the sewer systems of some large cities, Rio de Janeiro, for example.

The farmer, in this part of Japan, at least, will not undertake the breaking up or tillage of new acres without an assured supply of manure, and it is considered more profitable to raise two crops, as rice and barley, in one year from the same soil with manure than to let land lie fallow with the idea of improving it by rest.

SICKNESS AND MORTALITY.

The first and second annual reports of the Central Sanitary Bureau are so manifestly and confessedly imperfect that I shall make but little use of them. The third annual report was published in 1881, and covers the period from July 1, 1877, to June 30, 1878. Many allowances must be made in the consideration of medical statistics from Japanese sources. Errors in diagnosis and classification of diseases must be frequent, and the collection of data has heretofore been too imperfect to insure accuracy. The later reports are much nearer the truth than the earlier ones, and show great progress in the collection and arrangement of statistics. Thus the first report (to July 1876) gave the annual death-rate as 5.84 per 1,000 of population. In 1877-'78, the rate was 10.43; in 1878-'79, 13.47, and in 1879-'80, 17.01 per 1,000.

Deaths from July 1, 1877, to June 30, 1878.

Under 15 years (31.5 per cent.)	108, 770
Under 50 years (25.93 per cent.)	89, 550
Over 50 years (40.24 per cent.)	138, 961
Unknown (23.2 per cent.)	8, 013
	<hr/>
Males	180, 285
Females	165, 010
	<hr/>
Total	345, 295
	<hr/>
Ratio to 1,000 inhabitants	10. 43

The number of male deaths exceeds that of females for all ages and all classes of disease except diseases of the genito-urinary organs (syphilis is excluded) and unclassified diseases.

MORTALITY.

	Per cent.
Diseases of the digestive system.....	24.1
Diseases of the nervous system.....	23.1
Diseases of the respiratory organs.....	18.52
Diseases unclassified.....	17.17
Febrile diseases.....	10.53
Genito-urinary (syphilis, excluded).....	2.02
Surgical accidents, violence.....	1.96
Syphilis.....	1.11
Diseases of the skin.....	0.86
Diseases of the circulatory system.....	0.62
Total.....	99.99

The report attributes the excessive mortality from diseases of the nervous system in some degree to hydrocephalus in the infant and apoplexy among the aged. As *post mortem* examinations are rarely held this class probably includes many cases of sudden death from unknown causes and cases of error in diagnosis. The paralysis, &c., following kak-ke (beriberi) and the apoplexies induced by saki contribute to this class of mortality.

The reports of sickness give the greatest percentage for diseases unclassified; second, diseases of respiratory organs; third, diseases of the digestive system, and, as regards the two latter, asks the pertinent question: "Does the principal cause thereof lie in the unfitness of the clothing, food, and dwellings, or in something else?"

The infectious and contagious diseases of the year were typhoid fever, cholera, small-pox, and diphtheria. Dysentery is also included.

Diseases.	Cases.	Recovered.	Deaths.	Percentage.
Typhoid fever.....	1,964	1,823	141	7.18
Cholera.....	13,816	5,789	8,027	58.1
Small-pox.....	3,441	2,748	693	18.98
Diphtheria.....	596	394	192	32.76
Dysentery.....	349	211	38	(*)

*NOTE.—100 cases result unknown.

The "statistical tables of births, marriages, and deaths," exhibited at the Second National Industrial Exhibition by the Sanitary Bureau (Tokio, 1881), give a more complete record of mortality than the report just cited, but are very incomplete as to births, marriages, and divorces. A different classification is employed, and the two years from July 1, 1878, to June 30, 1880; are included. Nothing more recent has, I believe, been published.

Mortality.	July 1, 1878, to June 30, 1879.		July 1, 1879, to June 30, 1880.	
	Number.	Per cent.	Number.	Per cent.
Under 10 years	127,096	28.70	135,664	25.78
Under 20 years	21,295	4.81	28,633	5.44
Under 30 years	34,565	7.81	45,406	8.63
Under 40 years	36,193	8.17	48,188	9.15
Under 50 years	34,904	7.88	46,701	8.87
Under 60 years	47,056	10.83	60,295	11.45
Under 70 years	60,783	13.73	73,007	13.86
Under 80 years	54,604	12.33	63,505	12.05
Above 80 years	22,431	5.07	25,368	4.80
Uncertain	3,017	0.68		
Total	442,844		526,723	
Ratio to 1,000 inhabitants		13.47		17.01
Males	233,320	52.69	278,073	52.79
Females	209,524	47.31	248,649	47.21

In these tables the female deaths exceed the males between the ages of 10 and 40 and above 80 years. The excess is found in constitutional diseases, diseases of both circulatory and respiratory organs, but especially in diseases peculiar to sex. Above 80 years the excess is found in all classes of disease, except accidents or violence, diseases of the skin, and syphilitic diseases.

Mortality causes.	July 1, 1878, to June 30, 1879.		July 1, 1879, to June 30, 1880.	
	Male.	Female.	Male.	Female.
Infections or contagious diseases	33,848	26,621	55,831	44,953
Constitutional diseases	31,612	34,307	39,161	41,539
Diseases of the nervous system	37,987	31,655	40,779	33,332
Diseases of the circulatory organs	5,547	5,507	3,884	3,910
Diseases of the respiratory organs	35,535	29,309	37,278	30,579
Diseases of the digestive organs	50,298	40,849	52,943	42,767
Diseases of the genito-urinary organs, including parturition	2,774	13,035	3,308	15,619
Diseases of children	27,863	23,891	33,337	26,663
Surgical, including accidents and violence	5,562	3,873	6,918	4,617
Diseases of the skin and syphilis	3,915	2,122	4,302	2,385
Uncertain	379	295	312	336
Total	233,320	209,524	278,073	248,649
Per cent	52.69	47.31	52.79	47.21

Cholera in 1879.

Cases, true	84,907
Cases, apparent	65,063
Cases, uncertain	417
Total	151,287
Male cases	82,060
Female cases	68,509
Recoveries	51,911
Deaths	99,376

Okinawa Ken, comprising the Liu Kiu islands, with 8,435 cases and 3,656 deaths, is not included in the above table.

Cholera is said to have made its first authentic appearance in Japan in 1822, when there was a severe and fatal epidemic, supposed to have been introduced into Nagasaki by a Dutch ship coming from Java. Twenty years later there was another outbreak in the northern part of

the main island, origin and history unknown. A serious epidemic again occurred in 1858, and lasted nearly three years. This commenced at Nagasaki, and is said to have been imported from China; 1862, 1866, 1877, 1878, and 1879 were cholera years. In the latter year it was quite severe, as shown by the statistics just given. In the autumn of 1881 cholera existed at Kioto, Osaka, Nagasaki, and other points, but cannot be said to have extended to Tokio and Yokohama.

OTHER DISEASES FROM JULY 1, 1879, TO JUNE 30, 1880.

Typhoid fever: 9,035 cases; 6,172 recoveries; 2,863 deaths; returns nearly complete; reliability may be questioned since more than 2,000 cases were under 15 years of age (433 were under 5 years and 646 over 60 years of age). The disease seems to present no special features in Japanese patients. The abstinence from animal food, including milk, and the excessive use of rice as an article of diet, delay convalescence. Wernich (*Geographische Medicinische Studien*, Berlin, 1878, p. 198) speaks of persistent irritation of the digestive tract and obstinate bronchial affections as protracting the disease to three months in cases of only moderate severity. The number of sick days in 40 cases seen by him gave a very high average.

Typhus fever: 2,323 cases; 1,736 recoveries; 587 deaths; returns nearly complete; 21 per cent. under 15 years of age. Typhus fever exists among the Japanese, but I doubt the accuracy of diagnosis of the average Japanese physicians. An epidemic of fever is said to have occurred this year, which received various names, according to fancy, but which was neither typhoid nor typhus, but resembled severe *rötheln* more than any other disease; mortality from this cause is probably divided between typhoid and typhus.

Small-pox: 4,799 cases; 3,504 recoveries; 1,295 deaths; returns incomplete. Of all the cases, 1,285 were vaccinated persons, and of these 152 died. On the approach of an epidemic of variola the Government takes measures to enforce vaccination. There is a Government vaccine farm in Tokio, and although seamed and scarred faces from former small-pox are everywhere met, there is good reason to believe that the frightful ravages of the past will not be repeated.

Diphtheria: 1,270 cases; 736 recoveries; 534 deaths; returns are nearly complete; 88 per cent. of the mortality between 5 and 7 years of age. The distinctions between croup and diphtheria are probably not observed by most Japanese physicians. Although the Japanese bear operations of all kinds remarkably well, tracheotomy, in the hospitals where European surgeons were employed, has met with no exceptional success, the operation being usually followed by only temporary improvement (Wernich *op. cit.*, p. 197).

Dysentery: 7,620 cases; 6,382 recoveries; 1,238 deaths; returns nearly complete; 43 per cent. of the mortality under 15 years of age.

GENERAL REMARKS.

Wernich (*op. cit.*) claims that the Japanese are exempt from puerperal fever, scarlet fever, typhus fever, and dengue. This statement is too broad. There were cases of true typhus in Tokio last spring, seen and diagnosed by European physicians. Scarlet fever has also been seen by Dr. Baelz, of Tokio, but is rarely met with, has always been of a mild type and not actively contagious.

Erysipelas, tetanus, septiciæmia and surgical fevers are rare and mild. Patients bear operations remarkably well and remain quiet, unless severe operations, without anæsthesia. Recoveries after operations are usually rapid. In their apparent immunity from pain and the general absence of troublesome complications, the Japanese resemble the Chinese.

Measles.—Severe epidemics have occurred with great mortality.

Relapsing fever, yellow fever, and plague are unknown in Japan.

Cerebro-spinal meningitis.—This disease has undoubtedly occurred as an epidemic, but there are no definite data.

Rheumatism and gout.—Acute attacks of either are not common in the native population, in my opinion, but the multiform varieties of chronic rheumatism, so called, are very frequent, and the moxa, the universal remedy, the amma or professional shampooer also finds pretty steady employment.

Bronchitis, pneumonia and pleuritis occur with perhaps the usual frequency, but I know of no statistics on these diseases. They are asthenic, slow, apt to become chronic and be followed by phthisis. Hæmoptysis is a common symptom of the latter disease, and considered by the natives as a bad omen. Habits, food, dress, and houses are all unfavorable, and the climate too variable and moist to aid recovery.

Malaria prevails generally in Japan and complicates other diseases here as elsewhere. The native physicians derive their fees from the drugs prescribed, each physician being his own druggist. Quinine is universally employed, but on account of its comparatively high cost is too often given in insufficient quantities. A Government inspection of drugs under the direction of foreign inspectors, provides against the sale of adulterated or inferior medicines.

Diseases of the digestive organs are, as shown by statistics, very common. The national diet is rice, and nothing seems able to replace it in public esteem. Religion, prejudice, and, in large measure perhaps hereditary tastes, oppose the eating of flesh, and even eggs and milk; millet replaces rice to some extent as food for the aged and poor. Fish, vegetables, esculent roots and fruits are used as supplementary articles of food. The poverty of rice in nitrogenous elements is made up partially by pickled vegetables, sauces, and fish. Almost everything caught in the sea is used as food, but animal oils and fats are scarcely, if at all, employed. Children and adults have dilated stomachs, and are frequent sufferers from gastralgia, constipation, hæmorrhoids, and parasites. I know of no special tendency to diseases of the liver, abscess, and cirrhosis are certainly not common.

Diseases of the kidney present no special features.

Calculus disorders are extremely rare, presenting a contrast to China in this respect.

Diseases of the nervous system.—Headaches, nervous irritability, and male hysteria are said to be common among students and the higher classes of Japanese, induced by the strain and stimulation of modern science and western civilization. The Japanese have classified different forms of insanity, but the insane are usually cared for at home. Insolation is very rare. The Japanese laborer works bareheaded in the hot sun, and in compliance with ancient custom shaves the top of his head from forehead to occiput. Meningitis is perhaps more common among children who are carried on the back with heads exposed to the direct rays of the sun.

Circulatory system.—I have seen the statement that valvular disease and aneurism are unusually frequent, but can find no evidence to sus-

tain the assertion. Griffis (Mikado's Empire) alludes to the frequency of varicose veins. In former times, when officials and others were compelled by custom and ceremony to sit for hours together with limbs sharply flexed at the knees, varicose veins and eczema of the legs were both common in the higher classes, but I doubt whether the laboring classes were ever thus affected by the custom. Now, certainly, every observer sees thousands of splendidly developed naked legs among the coolies who perform the usual labor of beasts of burden, and rarely will he see even the most insignificant varicose vein, unless injured by Kak-ke or other depressing anæmic influences, the circulatory system performs its duties in a very efficient manner.

Diseases of the skin and eye are very common. It is my belief that deaf-mutism is not so common as in Europe and America, but I know of no trustworthy statistics.

Leprosy.—This disease, which so far, as known, has never been communicated to the white races in Japan, and even passes by the filthy Chinaman, seems, in a certain extent, to be endemic. In some cities and villages it is quite common, in others much less so. There is a hospital for this disease in Tokio, where a considerable degree of success is claimed in its treatment, but most lepers live quite comfortably in the homes of their families or friends. Association with lepers, except sexually, does not seem to be generally avoided. Dr. Wernich says that in many houses of prostitution, leprous girls are kept for commerce with men affected with the same disease.

Kakke, or beriberi, thus far in the history of Japan, also of little importance in its disposition to affect the foreigners is a very serious disease in its effects upon the Japanese.* Although the mortality does not seem to be so great as in India, and while it only prevails from April to September, it is met with over almost the entire Empire, certainly as far north as Hakodadi (latitude 41° 47' N).

The disease presents different characteristics in different localities and different epidemics, affects the sea-board more than the interior, and crowded ships, barracks, schools, and prisons rather than the ordinary dwelling. In whatever aspect it presents, convalescence is slow, recovery imperfect, with strong tendencies to recurrence and probable permanent impairment of health and strength. The sub-acute and chronic forms are relieved by a stay in the mountains, which is the only known remedial measure of certain value, and for this the Japanese are indebted to the foreigners.

I have had the following imperfect data translated from the reports of the Japanese kak-ke hospital at Tokio:

Admissions (April to December, 1878)	238
<hr/>	
Discharged:	
Recovered	159
Improved	23
No improvement	27
Died	25
Remaining in hospital	4
<hr/>	
Admitted:	
Males	228
Females	10

Nearly all the cases were between fifteen and thirty years of age.

*The few cases where this disease has been reported as affecting the foreigners in Japan, have all been doubtful, not a single case of positive infection of the foreigners is known here.

Of parasitic diseases, Japan has her full share, not only of the ordinary forms, but of others peculiar to the East, as filaria and distoma Ringerii.

Drunkeness.—The Japanese are temperate. Water is largely replaced by weak tea, which is the national beverage. Saki brewed from rice, is the national stimulant. It is of the strength and general appearance of a light sherry, is usually drunk warm from small cups, and the excitement produced by it in the foreigner is evanescent, in the Japanese the effect seems greater.

The fiery distilled spirit from rice is not in common use. The drunken Japanese is merry or stupid rather than quarrelsome or destructive. There is no reason to believe that the use of stimulants is exercising any deleterious influence on the Japanese race.

Tobacco is the only narcotic used in any excess. Smoking is almost universal in both sexes. There are from two to four puffs in a pipeful of tobacco, but the pipe is very frequently renewed. The smoke is inhaled. Cigars are smoked to a limited extent by those who associate with foreigners, and cigarettes seem to be growing in favor. I have never seen but one foreign pipe in the mouth of a Japanese.

Suicide and homicide.—Neither is common. The ancient custom of hiri-kiri shows that there is no especial fear of death in the Japanese character, but pain, poverty, and adversity are accepted as matters of fact beyond personal control. The sword or cudgel is the ordinary weapon of attack, but murder, except for revenge, is an unusual event. Fire-arms are not used for such purposes. Drowning is the preferred method of suicide.

Syphilis will be considered later in its relations to the foreigner as well as to the Japanese.

The results of my efforts to determine the rate of increase in the population of Japan were too unsatisfactory to be utilized.

As a matter of interest I quote from the Japan Mail:

There are 6,520 medical men practicing in Japan, of whom 504 only have received legitimate diplomas, and of these latter 50 reside in Tokio.

THE FOREIGNER IN JAPAN.

The ports open to foreign commerce are Yokohama, Osaki, Kobe, Nagasaki, Niigata, and Hakodadi.

The number of foreign residents, exclusive of Asiatics, was given in 1879 as 2,398, of whom 433 were Americans.

The Japan directory for 1882 gives the following numbers:

Nationality.	Residents.	Business firms.
Americans (United States).....	407	40
Austro-Hungarian.....	26	3
Belgian.....	13	1
British.....	1,057	106
Danish.....	29	2
Dutch.....	75	10
French.....	184	37
German.....	300	41
Italian.....	32	4
Russian.....	84	1
Swiss.....	23	11
Other nations.....	100	.....
Total.....	2,350	256
Chinese.....	3,564	162

In the last five years there has been an increase in the number of Chinese and Chinese firms, and a slight but steady decrease in the number of Europeans and Americans. The amount of business, except in a few articles of increasing general consumption, has also decreased.

Yokohama, in latitude $35^{\circ} 26'$ north, and Tokio, 18 miles distant, contain more than two-thirds the entire European population in Japan. An analysis of the directory gives the following details:

	Adult males
Yokohama	815
Tokio.....	188
Osaka and Kobe.....	254
Nagasaki.....	110
Niigata.....	19
Hakodadi and vicinity.....	35
Elsewhere.....	35
Total.....	1,447

These numbers include foreigners in the employ of the steamship companies, who have a partial residence, and many who are absent on business or pleasure. Members of large firms alternate with each other in going home, and there are many others who only remain in Japan during the tea or silk season. On the other hand Japan is the starting point and terminus of long sea voyages, and many vessels remain for weeks and months in its ports, swelling largely the number of temporary residents, while the sight-seer and pleasure-seeker finds Japan so pleasant that, in many cases, he remains longer than he at first intended and regrets that he has not more time to give.

There are about 600 foreign women in the empire. The Ladies' Directory, which does not include white prostitutes, grog-shop keepers, &c., has 524 names. Of these 130 are unmarried, so that from 25 to 27 per cent. of the foreigners have foreign wives resident here. A few foreigners, males, are considered as married to Japanese wives, and there are perhaps a dozen Japanese who have foreign wives.

Since 1860 a large number of Eurasian children has been born every year, and they apparently thrive through infancy and early childhood and are then lost sight of, so that it is an unusual thing to recognize one of these children apparently more than twelve years of age. Many doubtless die, but many more, I think, are so thoroughly Japanese that the paternal portion of their inheritance is not readily recognized. The Japanese characteristics, color, hair, and features, are much more strongly impressed on these children than any element of foreign race.

The Japanese women do not adopt the fashions and customs of western civilization. The men wear with pleasure the hat, boots, and dress of the European, but a bonnet on the head of a Japanese lady would be a curiosity. Only a few ladies at court, who have lived abroad, have adopted European costumes in society.

The Japanese women who live with Europeans and manage their households are, to all outward appearances, like other Japanese, and their children are brought up as Japanese children, in most instances speaking only the Japanese language, so that in later life all traces of foreign origin are lost and they become an integral part of the mixed race from many sources, which we call Japanese.

MANNER OF LIVING.

The foreigner in Yokohama lives in comparatively easy circumstances. Absolute poverty can only be the result of prolonged sickness or willful

neglect of work. Dwellings are either in the town, known as Settlement, or on the bluff. In the settlement the same buildings are in some instances devoted to business and places of residence, but more generally business men reside in separate comfortable dwellings. In all the open ports the foreigners reside in concessions distinct and separate from the Japanese quarters.

The bluff in Yokohama overlooks the settlement, is irregular in surface and contour, and from 80 to 125 feet above the sea level. The houses are, for the most part, one-story bungalows, built just above the ground, without cellars or underground drains. These bungalows have a certain uniformity, a central hall with two or three rooms on either side, ample verandahs, and the kitchen and servants' quarters in detached buildings. The walls are either of wood, or wooden frames covered with tiles and plaster. On account of earthquakes room ceilings are generally of thin boards, and in some instances partitions also. Two-storied houses only differ from bungalows in their size, the general construction being the same.

Imperfect drainage and the lack of free ventilation under the floors are the principal defects in house construction in Yokohama. Privies and sewers are unknown. The surface drainage is excellent.

Food is abundant in quantities and varieties. The Japanese became excellent cooks and servants. The markets are abundantly supplied with many varieties of fish; the beef is very good; mutton brought from China is rather expensive and not so good as the beef; vegetables are abundant in variety, but many lack the home flavor. Japanese fruits are, with few exceptions, dry and insipid.

A light, early breakfast, a substantial tiffin of several courses between 12 and 1 o'clock, and a prolonged dinner at 7 or 8 in the evening constitute the routine of meals.

Drinking is no more common, I do not think it as common, as in the corresponding classes at home. The life of the average European is well regulated and prudent. The demands of business are rarely exacting. Whole holidays and half holidays are frequent and observed; offices and stores are closed at 4 p. m. in winter and 5 in summer; horse-back exercise and walking after business hours are generally practiced.

There are boating, ball, and cricket clubs, freely patronized, even by men of fifty; a race week twice a year, when banks close and all business is suspended.

There is an unusual amount of play taken with the work of Yokohama business men, partly due doubtless to preponderating British influence and love of athletic sport, but also caused by the general feeling that physical exercise is a positive necessity in this climate. The deleterious effects of climate, soil, and habits of life on the resident of Yokohama, and generally of Japan, are (1) malarious, not severe in type nor frank in character, but sufficient to make quinine the household remedy for aches, pains, and general malaise; (2) nervous depression and irritability, not so marked as in India and the tropics, but enough to influence digestion and produce troublesome and even permanent impairment of digestion and assimilation; (3) stomachs are overtaxed by too much feeding, and digestion, naturally slower than in a more bracing climate, may be almost entirely arrested, resulting in obstinate dyspepsia and diarrhœa.

The effects of climate on the nervous system is also seen in the history of married women. The foreign mothers of Yokohama do not nurse their children. Dr. Eldridge says at least one-third of the parturient women in Yokohama are in this sense bad mothers, and I do not believe that one-

half the American mothers can supply milk to their offspring beyond the second or third month. The Japanese mothers, I may remark, nurse their children unusually long, even for three and four years.

Irregular and profuse menstruation is also common among the foreign women, as is also a pseudo-menstruation for several months, or during entire pregnancy. The tendencies seem to be similar to those in India, but the effects by no means so great.

It is said that the tea tasters sometimes suffer from nervous irritability and exhaustion towards the end of a busy tea season. I have not seen any cases. They are not very common, but when they occur are well marked and peculiar.

VENEREAL DISEASES.

Syphilis is very prevalent as well among foreigners as the Japanese. There are venereal hospitals (for natives) and a system of inspection of prostitutes in all cities, with few exceptions, where legalized houses of prostitution exist.

The first lock hospital was established at Yokohama in 1867, and soon after others were founded at Nagasaki and Kobe. For several years these hospitals were under the supervision of British naval surgeons, but all venereal hospitals and inspections are now under exclusive Japanese government control and management.

The hospitals are charity and compulsory; no payments of any kind are required from the patients. Statistics from these hospitals are, so far as I have been able to procure them, very incomplete. There are sufficient, however, from some of the larger ones, mostly in the open ports, to furnish items of interest if not of positive value.

In 1876-'77, out of 8,454 examinations 811 patients were sent to the Hiogo Hospital with diseases as follows: Hard sores, 12; throat sores, 3; soft sores, 162; gonorrhœa, 571; disease of bones, &c., 54; excoriations, 9.

The report of 1877-'78 give the following:

Examinations made	95,795
Patients sent to hospital.....	4,067
Hard sores.....	18
Maculoœ eruptions.....	9
Papular eruptions.....	35
Pustular eruptions.....	3
Tubercular eruptions.....	5
Iritis.....	5
Periostitis.....	5
Soft sores.....	1,405
Bubo	93
Gonorrhœa.....	1,415
Leucorrhœa.....	16
Oc ulcered.....	292
Excoriations.....	296
Vaginitis	1
Piles.....	2
Indefinite.....	467

Compared with statistics from other countries these figures show a very low percentage of cases of true syphilis. Doubtless the local sore often escapes the notice or the report of the inspectors, who are poorly paid and have abundant work. There is also a remarkable latency, a slow and insignificant development, of syphilis in the Japanese women, so much so that in cases of known communication by them careful search and continued observation for months have been necessary in order to prove that they were infected.

The Japanese men have the disease more severely than the women,

and their average stay in hospital is much longer. The surgeon of the Hiogo Lock Hospital gave three weeks as the average time of treatment of soft sores, and the treatment is of the simplest character.

Although the usual course of true syphilis in the prostitutes of Japan is mild and benignant (that they recover and bear healthy children is well known) it is probable that the trifling nature of the primary sore and other sources of infection render these women all the more dangerous. The liability to contract true syphilis would not be diminished by inspections to the same extent as the dangers of contracting chancre or gonorrhœa. The experience of foreign physicians here is that the liability to contract disease is very great, that sores are more common than gonorrhœa, and that no matter what the appearance of a sore may be, constitutional symptoms and eruptions are almost sure to follow. One physician, of large experience and a careful observer, says that 95 per cent. of all the sores seen by him are followed by the usual eruption. The ease with which syphilis is acquired seems to be in inverse ratio with its severity. I have never seen it more amenable to treatment and more kind in its dispositions than in Japan. Speedy and apparently entire recovery is the rule. Mixed race syphilis here is certainly no more severe than white race syphilis elsewhere. How much of this benignity is due to prolonged syphilization and heredity I do not pretend to say, but of the fact I may cite the absence of the ordinary and proper horror on the part of the young men of Yokohama when they contract disease. Familiarity has bred indifference.

The Government deserves great praise for its efforts to control venereal disorders. Much has been done to reduce the number of cases among seamen, but the good results have been somewhat lessened in the last few years by the increase in illegitimate prostitution in grog-shops and low places in the foreign settlements, and therefore exempt from inspection. The Japanese are more careful of the health of the foreign sailor than the representatives of their own nationalities.

MORTALITY AMONG FOREIGNERS IN JAPAN.

Dr. Stuart Eldridge published (Shanghai, 1878) notes on the diseases affecting European residents in Japan, from which I have taken mortality reports from 1871-'77. From 1878 to December 31, 1881, I have compiled the causes of death, thus making a continuous record for eleven years; prior to 1871 no accurate lists were kept:

Cause of death.	January 1, 1871, December 31, 1877.	January 1, 1878, December 31, 1881.	Remarks.
Small-pox	40	1	In 1871 and 1875, deaths 36.
Measles	3		
Typhus fever	4		
Typhoid fever	18	5	
Cholera	7	6	
Diphtheria	3	4	
Diarrhœa	9	5	Most of the 26 were non-residents.
Dysentery	26	2	
Remittent fever	3	4	
Intermittent fever	1		
Erysipelas		1	Others must be under diseased brain, &c. The benefits of a doubt must have been freely taken advantage of in the last four years as I furnished the only certificate of death by delirium tremens.
Pyæmia, septicæmia	2	2	
Puerperal fever		1	
Alcoholismus, delirium tremens	10	1	

Cause of death.	January 1, 1871, December 31, 1877.	January 1, 1878, December 31, 1881.	Remarks.
Acute rheumatism	2	1	
Cancer	3	2	
Phthisis pneumonia chronica	56	26	
Rickets	1		
Anæmia	1	2	
Tuberculosis	1	2	
Atelectasis		2	
Cyanosis		1	
Disease of the brain	1		
Meningitis, inflammation of the brain	11	13	Of the 13, some drunkards, others convulsions in young children.
Cerebral softening	7	1	
Cerebral abscess and effusion	2	1	
Cerebral hemorrhage	16	11	
Sunstroke	6		No case of sunstroke since removal of foreign troops. All cases noted were sol- diers.
Hydrocephalus	5	3	
Paralysis	3		
Cerebral congestion	2	1	
Convulsions	14	2	
Tetanus	2		
Epilepsy	2		
Mania	1		
Disease of the heart	27	4	
Fatty degeneration of the heart		1	
Pericarditis	1	3	
Aneurism	20	11	Nine of the 11 residents of Japan.
Phlebitis	1		
Laryngitis		1	Syphilitic.
Croup	4	2	
Bronchitis	14	7	Young children, several cases.
Pneumonitis	17	8	
Pleuritis	4		
Empyema	1	1	
Emphysema, asthma	2		
Hydrothorax	1		
Pulmonary apoplexy	1	1	
Ulcer of stomach	1	1	
Enteritis	4	4	
Obstruction intestine	1		
Intussusception intestine	1		
Colic	1		
Disease of liver	7	1	
Abscess of liver	8	2	
Abscess of spleen	1		
Peritonitis	4	5	
Ascites	2		
Uræmia	1		
Suppression of urine	1		
Nephritis, albuminaria, Bright's disease, &c	12	8	Nearly all returned as Bright's disease.
Uterine irritation	1		
Died in child-birth	2		
Carbuncle	1		
Extensive sloughs	1		
Asphyxia	6	2	From open charcoal fires in most instances.
Poison	2		
Drowning	21	2	
Fractures, contusions	17	4	
Gun-shot wounds	3	2	
Burns, scalds	1	1	
Cerebral concussion	2		
Cuts, stabs	2		
Murder, manslaughter	1	2	
Suicide	7	4	
Still-born	9	10	
Dropsy	3	3	
Debility	8	2	
Atrophy	1		
Hemorrhage	1	1	
Mortification, gangrene	1	1	
Not classed	112	18	
Total	601	212	

There is but one cemetery in Yokohama where foreigners residing in Tokio and Yokohama are buried. The notes of Dr. Eldridge and my own are taken from the register of this cemetery, and may be considered as fairly accurate. A few bodies have been sent home without interment here, but more have been buried in the cemetery who have died at sea or elsewhere in Japan.

The data were insufficient to establish the residence or non-residence of fatal cases in the notes of Dr. Eldridge, but of the 212 deaths which I have noted 140 were residents of Japan and 70 were strangers.

There are three naval hospitals in Yokohama, and patients from other navies are received in the general hospitals, besides many patients come here from Shanghai and Hong-Kong.

Nationality.	Number.	Ages.	Number.
British	87	Under 5	53
American, United States.....	38	5 to 15	4
German	25	16 to 30	51
French	17	31 to 60	32
Russian	8	Above 60	4
Other	37	Not given	18

CAUSES OF MORTALITY.

Small-pox.—In the winter of 1870 and 1871 there was an epidemic of this disease. The number of deaths in 1870 is unknown, but in 1871 there were 25. In 1875 there were 11. From 1878-'81 but 1 death. Cases of small-pox are brought here every few months from the China ports, and it prevails to a greater or less extent among the Japanese. The foreigners may be considered as well protected by vaccination.

Measles and scarlet fever require but a few words. The former has, at times, prevailed with great severity among the Japanese; the latter is almost unknown. No deaths from either disease among foreigners in the last four years, and, so far as known, never a case of scarlet fever among foreigners.

Typhus fever was epidemic in 1869-'70; has not prevailed since. Occasional cases are received in the hospitals from the shipping. I saw 2 doubtful cases in residents last year. No deaths in four years.

Typhoid fever.—Five deaths in four years. Prior to 1870 it is said to have been more common than it has been since. Foreigners are generally careful in their use of drinking water.

Diphtheria was of exceptional rarity, if indeed it had an existence prior to 1876. Three burials are noted prior to 1878. Two deaths occurred in 1878, and two children in one family died from this cause in 1881.

Cholera seems never to have affected the foreigners severely and fatally. The appearance of this disease among the Japanese certainly causes no apprehension in the foreigner. During the last summer, although prevailing quite severely in portions of the Empire in direct and almost daily communication with this port, cholera did not make its appearance here, and I heard of no cases among foreigners anywhere in Japan. Within the last few days (May 20, 1882) several cases, rapidly fatal, have been reported in the Japanese portion of Yokohama, but they have caused no comment. I do not expect that past immunity will always continue. There were 3 deaths from cholera in this vicinity in 1878 and 3 in 1879. One of them, however, was a Japanese, buried in

the foreign cemetery, and 2 of the others contracted the disease in the country, 40 miles from Yokohama.

Simple cholera, diarrhœa, and dysentery, occurring among residents, are light and easily treated; nearly all the obstinate and chronic cases of diarrhœa and dysentery seen by Yokohama physicians come from China.

Remittent and intermittent fevers.—Three deaths in the last four years are ascribed to remittent fever. The severe and congestive forms are unusual in this part of Japan, and frank ague is rarely met with. A variety of severe colic, quite often seen, is promptly relieved by a full dose of quinine, but does not yield to ordinary remedies. Fevers characterized by irregular periodicity, obstinacy, and absence of all specific signs are seen, upon which quinine has no immediate effect.

I saw several cases last year, some coming from China, others originating here, where from the time of attack until convalescence was complete was about thirty days. None of the cases caused apprehension, and in none of them did specific treatment seem to be of much use. Malaria is a potent, depressing factor in many of the diseases met with in Japan.

Acute rheumatism.—Two deaths in seven years; 1 only in four years; like other acute inflammatory diseases it is not common.

Phthisis.—Twenty-six burials in four years, 12.26 per cent. of the total mortality. Many patients with this disease are sent to the naval hospitals here from other ports on the China station. Of the 26 deaths one-half were residents. While I have no reason to believe that phthisis originates here to any unusual extent, I do not consider the climate of Japan favorable for those already affected with the disease. None of the cases seen by me in the last eighteen months have substantially improved. The climatic influences are depressing.

Diseases of nervous system.—Cerebral disease in foreigners may safely, in most instances, be ascribed to an alcoholic origin.

Diseases of the circulatory system.—From the rarity of acute rheumatism, valvular diseases of the heart should be infrequent, and this is the experience of physicians in foreign practice. Cases of irritable heart are more common. Aneurism is strikingly frequent, Dr. Eldridge noted 20 deaths, or 4.1 per cent. of the total classified mortality. In the last four years, there were 11 or 5.66 per cent. of the classified deaths; 16 of the first were residents of Japan and 9 of the latter. Dr. Eldridge suspected that long residence in Japan was in some way connected with this mortality, and this suspicion is strengthened by the history of the last four years. I may add that I have seen extensive atheroma in examinations made after death from other causes.

Pneumonitis, bronchitis, and pleuritis.—Sixteen deaths in four years, including 1 from empyema, or 8.25 per cent. of the total classified mortality. These diseases are not at all frequent in the respectable adult portion of the community. Frank, sthenic pneumonia or pleuritis is extremely rare. Effusions are not readily absorbed.

Diseases of the digestive organs.—Deranged digestion is a prominent source of income for the physician in private practice, and many patients, women, are sent home with dyspepsia and kindred ills. I am especially satisfied that there is no tendency to hepatic disease peculiar to Japan. Nearly all cases of liver abscess seen here have originated elsewhere. The liver has no vicious habits which cannot be traced to individual causes or such as are common to other civilized and temperate zones.

Diseases of the kidney demand no special notice.

There seems to be a full percentage of cases of *suicide*, which might

be expected in a distant community like this, of those who are unwilling to work and unable to get away.

Diseases of children.—A very large proportion of foreign children are bottle-fed and give the physician a great deal of trouble. Dentition is often troublesome but rarely fatal. Cholera infantum is almost unknown. Taking all into consideration young children thrive remarkably.

There is little to be said about the influence of occupation, as I have already described the manner of life at the open ports. We have our full complement of the waifs and strays of society, beach combers and vagrants, who drink when they can and whose mortality serves to swell the lists of death from diseases of heart, brain, and liver. Owing to the absence of co-operation among the foreign consuls, drinking-shops and other places of ill-repute exist in the foreign settlement without restraint and of the worst character.

The missionary element is quite large, and I think unusually prone to digestive disorders. Some have brought troubles with them, others acquire them here from sedentary habits, too great mental strain in acquiring a strange language, and neglect of muscular exercise. The mortality however, among missionaries has been very small. In eleven years there were but 8 deaths and 4 of them were Sisters of Charity or Mercy. There were 9 physicians buried here in the same number of years. When sick, the missionaries readily obtain leaves of absence and go home, which perhaps accounts for the small mortality among them.

There are several missionaries in Japan who have lived here almost continuously fifteen to twenty years, and who are still vigorous and useful.

In the preparation of this report I am largely indebted to Dr. Eldridge, whose stores of information, acquired by long residence and active practice, have been generously and freely given.

REPORT OF SURGEON GEORGE W. WOODS, U. S. N.

KARACHI.

May 17-20, 1883.—Karachi, the most northern port of the western coast of India, is the chief city of the populous province of Scinde, and embraced within the Bombay Presidency, under the immediate government of a special commissioner.

The harbor is a small but admirable one, protected on the west by the fortified points of Manora, a well constructed breakwater, and Baba Island, and upon the east by Kiamari Island. It has a capacity for sixty large steamers, and penetrates the land by numerous creeks navigable for small craft.

On Kiamari Island a small town has been built, and many large wharves have been constructed to facilitate the foreign commerce of the place. This commercial town is connected with the old town by means of a mole nearly 2 miles in length—the “Napier Mole”—which crosses a creek or lagoon navigable for small craft, and by which they reach the “Native Jetty.”

A mile beyond the compactly built native town is “The Camp,” a straggling town of bungalows which has grown up around a military post. There are, however, banks, some large commercial houses, many fine stores, several handsome churches, and at least one imposing structure, the “Frere Hall,” which contains a fine library and museum.

The native houses are built of mud and rude concrete, and the streets of the native city are narrow and filthy. The European city, is however, constructed of stone and brick, and laid out with broad avenues, while the private bungalows, with their deep verandas, are surrounded by ornamental grounds in which the palm flourishes.

Karachi, being located at the mouths of the Indus River, forms the natural outlet for the commerce of its valley, Beloochistan, Northern India, and Cashmere, and is becoming a most important city, now that it is the terminus of the Scinde Railway, and also from being a large military station near the northern boundary, where disturbances are always apprehended.

The railroad is extended to the commercial town on Kiamari Island, and here numerous lines of steamers connect and transport wheat, cotton, silk, hides, wool, indigo, and dried fish to the Indian ports, the Mauritius, the Mediterranean, and England.

Karachi is situated in what is known as Lower Scinde in the delta of the Indus, and on the border of an arid alluvial plain of clay and sand. In the spring, from the melting of the mountain snows, the many Punjab rivers send down to the Indus such a volume of water that it overflows its banks like the Nile, fertilizing the plain over a large area. But beyond this overflowed area, on account of the small rain-fall, it is an arid desert, impregnated with salt and alum, and vegetation only represented by the caper shrub (*Capparis aphylla*), the babul or acacia, and several varieties of *Salvadoracæ*.

The river bottom is, however, very fertile, and with irrigation anything coming under the head of semi-tropical productions can be grown to perfection. Here also are large preserved forests of poplar, tamarisk, and acacia, in which the tiger, leopard, and wild boar are still hunted, while partridges, snipe, and water fowl are very plentiful along the river banks and about the delta.

The population of Karachi is stated at between fifty and sixty thousand, comprising, besides the native Sindians, a large number of Beloochis, Parsees, and Europeans. The natives are a mixed race, tall, dark, and well formed, principally the result of intermarriage with Beloochis, and are classed as a most immoral, ignorant, and bigoted people.

There is no rainy season in this portion of Scinde, the occasional showers rarely representing an annual rain-fall of more than 3 inches. Even this is undesirable, being always productive of malarial disease.

Like Egypt, the valley of the Indus may be considered as a rainless region, depending for the success of its agriculture upon the annual overflow of the river, which is controlled by dikes, and an elaborate system of scientific irrigation. The high-water period extends from early spring to the month of September, when it commences to subside, and the emptying of the great swamps and lakes, covering many square miles in the area of the delta, is a prolific source of malarial infection, at which time the city and its vicinity, as well as the whole valley of the Indus, is notoriously unhealthy.

The prevailing winds are the monsoons, the northeast monsoon blowing from December to May, and that from the southwest during the summer months and the greater portion of the autumn. It brings, however, but little rain, the clouds being nearly discharged of their moisture by the Western Ghauts before reaching the plains of Scinde, and then seem to float too high for any moisture to be precipitated.

The winters are often quite cold, especially in January, when the temperature has fallen as low as 32° in the night, rising at noon, perhaps, to 80°. A more usual minimum is 50°, with an average daily rise to 65°. The summers are very hot, but quite bearable compared with the interior of Scinde, where the heat is most intense, and sun-stroke common.

The water supply is obtained from the Indus and is either filtered or settled by means of alum, a native production.

Besides the usual military hospital, there is a large "Native Hospital" located at Karachi under the charge of a surgeon major of the Indian medical service. His only medical assistant is an apothecary, and native nurses are appointed according to the needs of the institution.

The hospital consists of two wings and a central administrative building. It has a capacity of 70 beds, with an average occupancy of 40. The principal admissions are surgical and obstetrical cases, with the varied forms of malarial disease. About 100 major operations are performed here annually. The average cost per day for each patient is 3 annas (about 7½ cents), and the average expense of treating each case admitted is put at 2¼ rupees, or about 50 cents.

The dispensary practice connected with the hospital is very large, there being a daily attendance of 100 to 150 patients.

Aside from malarial disease during the months of September and October, Karachi is a very healthy place, and a favorite resort for the people of Southern India seeking a more bracing climate without undergoing too radical a change.

The markets are well supplied with beef, mutton, game, fowl, and fish, but vegetables and fruit are mostly brought from Bombay.

BOMBAY.

May 22 to June 5.—Bombay, the capital and chief city of the Bombay Presidency, is situated on the western coast of India, in latitude $18^{\circ} 56'$ north, and longitude $72^{\circ} 83'$ east, at the base of the lofty ghauts. It occupies a series of islands, bound together and united to the mainland by causeways, bridges, and breakwaters, forming a peninsula, with an area of about 22 square miles. The island of Salsette is its northern limit, and the rocky point of Colaba its most southern, giving a water front of great extent, which sweeps along the western shore of the main island to the base of Malabar Hill, forming the Back Bay, or false harbor, accessible only to small craft. The true harbor is to the eastward, and is comprised between the peninsula and the mainland of India. It is very capacious, having a length of 14 miles, with an average width of 6 miles, and contains numerous lofty islands, the largest being Elephanta, Shewa, and Cariza. It is a safe harbor, save during the prevalence of the southwest monsoon, when, being open to the southward, it is often dangerous to shipping.

Bombay Island and the other islands forming the peninsula on which the city and suburbs are built are of volcanic origin, the higher land of the principal island consisting of two ranges of basaltic formation, and the lower land of alluvial deposits and tide lands reclaimed by dikes and drainage. The most western of these ridges rises to a height of 180 feet, forming Malabar Hill, while the eastern, lower and irregular in its elevation, terminates in Colaba Point.

The city occupies the southeastern portion of Bombay Island, and is divided into an old or European town and a new or native town, and the suburb of Colaba.

The European town has grown up around "The Fort," originally comprising extensive fortifications, of which the only remains are Bombay Castle and Fort George. It is a beautifully laid out district, of broad and busy thoroughfares, large and imposing buildings, both public and private, shaded avenues, extensive bunds crowded with shipping, and many tide docks. Its center is Elphinstone Circle, surrounded by lofty structures, principally government buildings, all constructed with arched fronts.

The chief elevation of the western basaltic ridge is Malabar Hill, which is now the residence of a large proportion of the European population. It projects as a bluff into the Indian Ocean, and being exposed to the sea breeze is a favorite place of residence. Its slopes are covered with the bungalows of rich merchants, both European and Parsee, and upon its summit are the *Dockmas*, or Towers of Silence, where the Parsees dispose of their dead according to the custom of their sect.

The native town is more compactly built with narrow streets, and is one vast bazaar, divided into various quarters, according to religion and race. The Mohammedans, Persians, Arabs, Hindus, and Mahrattas, all engaged in active business, occupy distinct quarters, within which are their own mosques, temples and cemeteries. The Parsees occupy an equally distinct business section in the "Fort," or European town.

All the large structures of Bombay are built of stone and brick, and the more recent erections of public buildings are beautiful examples of the Italian-Gothic. Wood is, however, the principal building material, and private dwellings are all built in the bungalow style, one story in height, with broad verandahs. The houses of the native town are often two stories in height with overhanging balconies, in many instances curiously

carved, and the sloping roofs are invariably covered with tiles. The poorer classes live in mud huts thatched with palm leaves.

There are many well-constructed and shaded roads within and around Bombay; many parks; a large public and zoological garden, embracing also an industrial museum, and most attractive rural suburbs.

Bombay's most popular drive is the Queen's Road, skirting the shore along what is known as the Sea Face—a line of reclaimed land—where in the evening the whole population come to drive, ride, or walk, and enjoy the sea air. The Apollo Bunder and Esplanade, when the band plays, are cool and capacious spots of evening resort.

The defenses of the city comprise earthworks on Cross Island, Malabar Point, and Colaba Point, with powerful batteries on Cross Island, Oyster Rock, and Middle Ground Shoal. There are also two iron-clads, the *Abyssinia* and *Magdala*, specially designed to assist in the defense, and to be manned by officers and men of the Indian Marine in case of war.

The population of Bombay in 1881 was 773,196, and in no other city of the world can such a variety of races be observed. All the various tribal and religious divisions of the Indian people are represented, as well as Arabians, Persians, Turks, Chinese, Afghans, Beloochis, Malays, Abyssinians, Armenians, Jews, Parsees, and the descendants of the old Portuguese colonists. The Europeans number 10,000, representing the official class, and most of those engaged in foreign commerce.

The climate of Bombay is by no means an oppressive one, and during the prevalence of the northeast monsoon, from November to March, the weather is cool and delightful. May and October are the hot months, but even then the heat is tempered by cool sea-breezes.

The southwest monsoon, commencing about the middle of June, brings copious rains, with much foggy weather, and the rainy season lasts until the end of September. The average rain-fall is about 80 inches, and the sea-breezes render the atmosphere moist throughout the year.

The hot season extends from March until the early part of June, with a temperature of from 80° to 90°. December and January are the cool months, the indications being often as low as 68°. During the rainy season the thermometer ranges from 75° to 85°.

For its water supply Bombay was, up to the year 1860, dependent upon wells, but in that year a system was completed by which water was introduced from the island of Salsette, a distance of 15 miles. It was obtained by damming up the valley of the Gopur River, and conducting the water into a reservoir or artificial lake. The quantity supplied is about 8,000,000 gallons, which allows 12 to 13 gallons per head of the population. The water-shed is carefully guarded from contamination by the forbidding of any branch of industry being carried on within its area. Notwithstanding this wise precaution the water is far from pure, on account of the growth and decay of vegetable matter within the lake, and the absence of any means to thoroughly clean and purify the basin. A second system of water supply was completed in 1880 by the formation, in a similar manner, of Toolsee Lake, and its connection with a large distributing reservoir on Malabar Hill. This system gives an additional allowance of 6 gallons per capita.

The city is properly sewered and every necessity of sanitation attended to by an efficient public health department. This department also supervises the markets, slaughter-houses, milch-cattle, stables, water-supply, cemeteries, vaccination, registration of births and deaths, and has control of all matters connected with epidemic disease. It has also supervision of the quarantine.

Bombay has from its earliest history until a recent period been a

notoriously unhealthy city. Its malaria was of the most pernicious character—all diseases assumed a typhoid type, wounds would not heal, and fatal bowel complaints were common. To adult Europeans it was always a place of impaired health, and to children it was fatal. Of late years, on the contrary, it has become a remarkably healthy place, due to the draining of the swamps, the filling in of low land, the supply of good water, and general sanitation. Malarial diseases, however, are still common and cholera is always existent amongst the lower classes, especially the fishermen, whose life of exposure and unwholesome diet make them particularly susceptible to the disease. From this class any epidemic is likely to have its source. The death rate in 1880 was 28 per 1,000 of the population, while in 1878 it was 41.39.

The principal hospitals are the European general hospital, the Goculdas Tajpali, or native hospital, the hospital founded by Jamsetjee Jejeebhoy, to which a leper hospital, a lying-in ward, and an incurable establishment are joined, and the ophthalmic hospital, endowed by Corwasjee Jehangiea. The latter is an especially great charity in a country where diseases of the eye are so common among the lower classes.

The Jamsetjee hospital contains 350 beds. These institutions occupy modern buildings placed in the midst of ornamental grounds, are furnished admirably, and provided with every appliance to be found in the best hospitals of Europe and America. They also have the attendance of foreign and native physicians and surgeons of the highest education and ability. They differ in no respect from hospitals in our own land, save that they are more open to the air, with large doors and windows in great number, all connecting with broad verandahs, which form supplementary wards, and furnished with comfortable extension chairs, tables, &c. The dry-earth closet is used here, as in all the hospitals of India, and antiseptics is thoroughly practiced, all operations being performed under its strictest rules.

In this connection may be mentioned the Pinjerapole, a hospital founded by the Banians for the cure of diseased and deformed animals. It is a large inclosure with cages and many-fenced divisions, each form of animal life being separately cared for. Every morning carts go through the city to pick up any stray animals which may be encountered, either sick or wounded; and they are admitted, also, for care and treatment, from private hands. The place is under the charge of a veterinary surgeon, so-called, who, however, makes no attempt to correct deformities or secure any proper union of broken limbs, but leaves nature to do her work unassisted. It is an especially pitiable sight to see such numbers of well-fed, sleek cattle and horses, otherwise in fine condition, displaying the most terrible deformities of their limbs, the bones united in every grotesque shape which can be imagined. The object of the institution is a religious one—to prevent the destruction of animal life. No attempt is made to cure diseases apparently, save in the case of mangy dogs, who present a most repulsive sight, packed in immense cages, where they are often seen tearing to pieces one of their dead companions, an emaciated hairless carcass covered with running sores. In these cases the time-honored preparations of sulphur are administered apparently with no satisfactory results.

Medical education for the native population is provided by a department of the university known as the Grant Medical College, founded in 1845 in honor of Robert Grant, governor of Bombay, and endowed by his friends, though principally supported by the Government. It provides an excellent course by able instructors, and the clinical advantages in the various hospitals are very great.

The principal market is on the esplanade, covering 72,000 square yards, and comprising a handsome stone building surmounted by a clock-tower, with a large central hall and fountain. It is divided into sections for the sale of beef, mutton, fish, poultry, fruit, flowers, and vegetables, and has many outside extensions. The beef and mutton are not superior, but the fish are admirable, especially the pomfret, a sort of flounder, and the Bombay duck, much esteemed as a relish when dried. Oysters are also abundant. All the best varieties of green vegetables are brought from Poonah, and potatoes from the mountains, while the Bombay onion is an extensive production and article of commerce, being esteemed throughout the East as the best in the world.

The Mohammedans bury their dead in coffins if of the wealthy class, or in wrappings of cloth if of the poorer. The Hindoos burn their dead, and the Parsees expose theirs upon a sort of a tower, where the body is speedily denuded of flesh by a swarm of vultures, leaving only the osseous skeleton.

Malabar Hill is surmounted by five of these towers, known as the Towers of Silence. They are circular, substantially built of stone, the largest being 276 feet in circumference and 25 feet in height, and are surrounded by a beautiful park.

The body, clothed in white, after prayers in the "Fire Temple," is brought to the tower upon a litter, and passed through a small door near the base, the only means of access. Here it is disrobed and then taken to an open platform forming the roof, where it is exposed. This platform, just below the summit of the circular wall, slopes towards the center, and is divided into three circles, the outer one for the bodies of men, the second for women, and the third or inner circle for children. The surface is further divided into spaces for each body, and grooved to carry off the rain, or any possible product of decomposition, towards a central well. This well is 45 feet in diameter, and its bottom is a filter of charcoal and sand. As soon as the bearers have left the vultures swoop down upon the body, and in a few hours nothing remains but the skeleton. After the lapse of a few days the attendants return, and the bones are shoveled into the central well. Sentiment is horrified at this method of disposal of the dead, and in Bombay other sects speak earnestly against it. But from a sanitary point of view it approaches perfection.

The dress of the Hindoos has certain variations governed by locality, caste, and creed, but it may be reduced generally to a long strip of white cotton cloth, the *dhoti* passed around the waist and then between the legs to be fastened at the back to that portion which forms the girdle. The upper classes add to this a white shirt or sack, the *augaskah*, also worn by the chief household servants, and a very flowing garment, the *jamah*, loose trousers often replacing the *dhoti*. The head is covered with a turban, or dexterous wrappings of long white cloth known as the *puggery*, and the feet are shod in sandals of hide. The women wear a sack, the *choli*, and the *sari*, a large white cloth, which they drape gracefully around their forms. They are generally laden down with bangles of silver and ear-rings, and wear a nose-ring often set with precious stones, which is a nuptial adornment. This jewelry represents often the family wealth, and the bangles are frequently riveted or welded on to the limbs to prevent robbery. When hard pressed for money it is the custom to go to the bazaar and dispose of a bangle, which is removed by the silversmith.

The food of the Hindoos is very simple and excludes meat, save in the very lowest castes. Rice, curry, to which ghee or clarified butter is

added, fish, eggs, milk, vegetables, and fruit, with *chupattis*, a thin cake of maize or wheat, constitute their principal food. Of fruits, bananas, oranges, mangoes, and melons are largely consumed. They are very fond of sweets, and much of the food offered for sale consists of fried cakes having the appearance of doughnuts. The *rossagola*, a ball of curds and sugar thus fried, is a great favorite.

Toddy is the only intoxicating liquor in use among the lower classes of natives. This is obtained by fermenting the sap obtained from the embryo bud of the cocoa palm, and is very intoxicating. The higher classes, as a rule, are temperate in their habits.

All the native population, irrespective of religion, make use of the areca nut as a masticatory. This is the fruit of one of the *Palmaceæ*, the *Areca catechu*, and is prepared by rolling a fragment of the nut with a small quantity of lime in a leaf of the *siri* or betel pepper, the *Chavica betel*. It dyes the teeth and lips of a deep red, and when chewed to excess is very disfiguring. It is, however, universally esteemed as a preserver of health, is said to promote digestion, and acts especially as a carminative. Without its use the vegetable food of the Hindoos produces painful flatulence.

The contagious diseases act, which requires the registration of prostitutes and the treatment of the diseased in a lock hospital, is strictly enforced. To this fact may be attributed the small percentage of venereal diseases following *general liberty* in Bombay, which was represented by a few cases of gonorrhœa. There was also very little drunkenness.

The Juniata visited the eastern ports of India during the months of July and August, making a brief stay at Negapatam, Pondicheri, and Vizagapatam, while at Madras and Calcutta the ship remained for a week.

NEGAPATAM AND PONDICHERI.

Negapatam (latitude $10^{\circ} 45' 40''$ north, longitude $79^{\circ} 50' 10''$ east) is a small town on the Coromandel coast, at the mouth of the Kavery River, and was originally a Dutch settlement, much of its architecture bearing witness to the character of the original colony, as well as the population, which comprises many descendents of the Hollanders: It is becoming an important place, now that it is connected with the Southern India railway system, and it has a large trade with the Straits settlements, Burmah, and Ceylon, conducted, however, under great difficulties, as it has only a contracted harbor at the mouth of the river, and within its dangerous bar, so that ships of large draught have to anchor in the "roads."

Negapatam is situated in a rich alluvial plain, where the cereals are cultivated by means of irrigation, and the crops, in favorable years, are enormous. This situation renders malarial disease universal.

The medical system of India is extended to this city and a most excellent hospital is located here.

PONDICHERI.

Pondicheri, also on the Coromandel coast, in latitude $11^{\circ} 55' 40''$ north, longitude $79^{\circ} 49' 40''$ east, is the principal city of the French Indian possessions, and one of the handsomest cities in India. It is situated, like Nagapatam, in an alluvial plain, which is remarkable for its *comparative* want of fertility, though it can scarcely be termed unfertile, as fair crops of rice and other grains are produced, while vegetables of excellent quality and most of the tropical fruits are raised in sufficient quantity to supply the population. The plain is watered by a narrow river which traverses the town, affording the means of irrigation and

an abundant supply of potable water, which is distributed through fountains.

This small river, also divides the town into two portions known as the White and Black towns, the former being the more modern and European quarter. This latter district is well laid out with fine macadamized streets and buildings in the style of Southern Europe, and along its shore, where a tremendous surf is always beating, for Pondicheri has no harbor, is a broad boulevard planted with trees and protected by a sea wall, an iron pier serving for landing purposes.

There are several large public squares, an extensive botanical garden, and some imposing public buildings, the Hotel de Ville, the governor's palace, the cathedral, and the clock tower being especially noticeable.

The general hospital is an admirably conducted institution under the charge of French military surgeons.

The population of Pondicheri city is about 50,000, and that of the province, which only has an area of 185 square miles, is about 136,000. Of the latter number 886 are Europeans, and 1,258 of mixed races.

The sanitation of the city seems to be excellent. The streets are kept scrupulously clean. There is an abundance of water easily accessible, and the local filth is removed daily from premises within the city limits.

Prostitution is a prominent feature of Pondicheri, and there is much venereal disease among the women practicing this profession, so that, though liberty from our ship was restricted to first-class men, and therefore very limited, a large number were affected with chancroides and gonorrhœa.

MADRAS.

Madras (latitude $80^{\circ} 14' 19'' 5''$, longitude $13^{\circ} 04' 08''$), the principal city, after Calcutta, on the eastern coast of India, and capital of the presidency of the same name, occupies a plain of sandy clay extending for 8 miles along a surf-beaten shore. A breakwater has been constructed at an enormous cost, but it is now a partial ruin, so that there is only a moderate protection to vessels within its narrow limits, and landing upon the beach, or even at the long iron pier, would be affected with some difficulty during the strength of the monsoon, but for the wonderful skill of the boatmen in their catamarans, with whom a disaster is almost unknown.

To the south of Madras is a small stream, and through the center of the city flows the Cooum River, both being connected with important canals extending for hundreds of miles into the interior of the presidency.

The city is divided into districts, the commercial portion being known as Black Town, which occupies the shore fronting the artificial harbor. It is a busy, densely populated section, and represents the European, native, and Eurasian business city. Beyond Black Town broad streets and avenues extend, shaded with a thick growth of trees, and macadamized with granite overlaid with laterite, traversing a district embracing 27 square miles, which has the character of the country rather than that of a metropolis. Bungalows abound here surrounded by ornamental grounds, and many of these are large commercial houses or storés, with the signs upon the gate posts.

The public buildings are numerous and striking, both for their size and architecture, and include several hospitals, affording ample accommodation for every character of disease or injury.

The principal defense of Madras is Fort St. George, a large fortress at the mouth of the Cooum River. It is built in the shape of an irregular pentagon, presenting a face to the sea of 500 yards, and on the land side five bastions. The south beach in the vicinity of the fort is a

favorite resort during the hot months. Here, towards evening, in the hot months, the people come in vast numbers to enjoy the sea breeze, to dance, to play games, and listen to the military bands.

Another favorite place of recreation is the "People's Park," embracing an area of 116 acres. This comprises an extensive zoological collection with many forms of recreation, such as tennis grounds, a swimming bath, and a gymnasium, where free instruction is given by a native acrobat. The "People's Park" is, however, but one of many public grounds open freely to the people.

The population of Madras, according to the census of 1881, was 406,117, the Hindoos forming 70 per cent., the Eurasians 3 per cent., and the Europeans less than 1 per cent.

Madras has a most oppressive climate, only moderated by an afternoon sea breeze. May is the hot month, and in January the minimum is generally reached, the record of 1880 showing 108°·1 on the 19th of May, and 59° on the 3d of January. The dry heat of summer is very enervating, when those who can leave for the Nilghiri hills and other elevated regions to the westward, there remaining until the autumnal change of the monsoons, which bring rain and cooler weather.

The monsoons are the prevailing winds, the northeast monsoon blowing from October to April and the southwest monsoon from April to October. From the 1st to the 15th of October there is a period when thunder storms prevail, ushering in the northeast monsoon, with which the rainy season begins. The average fall is about 49 inches, distributed through eighty days.

The water supply, up to 1870, was obtained entirely from wells and tanks, the "Seven Wells of Black Town" being especially famous. These are really ten springs, and the water, which is of the purest quality, is widely distributed. The numerous tanks, filled by natural springs, and the draining of water-sheds also furnish large quantities of water. Many of these are connected with temples, and a considerable portion of the city is dependent upon them, a circumstance much to be regretted, as these tanks are also used for sacred ablutions and accumulate filth. They are found throughout the Presidency and serve for local purposes of irrigation also. Since 1870 a large portion of the city has been supplied with an abundant supply of good water from the Kortalarig River, which is conducted to the Red Hills Lake, distant 8 miles from Madras, and thence to a circular tank near the city. From this tank it passes through filters and is carried by distributing pipes over a large area, though much of the city is still dependent on wells. The supply is at present far in excess of the demands, being fifteen times greater than the needs of the sections to which it is distributed, and will therefore be ample for the future when the system is completed. The scarcity of funds alone prevents an extension of the water pipes throughout the city limits, but this will soon be accomplished.

The city of Madras is under the government of a commission consisting of a president, two vice-presidents, and thirty-two members. The markets, hospitals, dispensaries, vital statistics, and vaccination, as well as all sanitary affairs, are under the control of this commission, but so far as the latter duty is concerned, though much is done, it is far from satisfactory in those localities where the city is compactly built.

There is no general system of sewers, but only roadside ditches, having a course, with very little fall, towards the river and shore. The garbage and excrementitious matter is carried off daily by coolies to the outside lands, where it is manufactured into poudrette. In Black Town spouts from the houses discharge themselves into superficial drains and gutters, along which, on account of the almost absolute level, it flows

so sluggishly that it becomes necessary to rake the filthy mass along towards the covered sewers which empty into the sea.

Amongst the prevailing diseases at Madras those having their origin in malarial poison stand at the head, with an astounding amount of organic trouble, as sequelæ, the liver, kidneys, spleen, and lungs being commonly affected. Next in order of frequency comes elephantiasis, phthisis pulmonalis, and cholera. The latter disease always prevails endemically in the Presidency, and when it becomes epidemic all agree that it is due to an imported force. Diabetes is also a common disease, which has been attributed to the great amount of starchy food consumed by the people.

The Government provides throughout this Presidency, as well as the whole of India, an admirable semi-military medical service, with hospitals and dispensaries in perfect proportion to the needs of the entire population, native and foreign. The dispensaries are generally under the control of native apothecaries, a scarcely appropriate title when it is considered that in these humble and poorly-paid servants we often find so much practical medical and surgical skill. They are located in every village and are under the control of the district surgeon.

The natives, practicing whatever there may be of a Hindoo system of medicine, are not without ability, but their occupation is almost gone now that a better medical service is offered by the Government. The native surgeons are quite skillful in setting and putting up fractures in clay, though too frequently this results in gangrene from pressure. They also operate for stone, for pterygium, and for cataract, the operation of *couching* having been practiced from ancient times.

The principal hospitals of Madras are the General Hospital, Government Lying-in Hospital, Eye Infirmary, Hospital for Women and Children, the Triplicane Dispensary and Hospital, and the Hospital for Lepers. There is also a "vaccine depot" under an officer termed the "Superintendent General of Vaccination."

The General Hospital is a building of two stories, with accommodations for 300 patients, capable of indefinite extension, however, to meet emergencies, through the erection of temporary wards in its extensive grounds. Openings lead from its spacious wards on to broad shaded verandas and into large halls, but there are no doors or windows, the exits being closed with mats when necessary.

The civil and military patients are treated separately, and there are luxurious rooms for officers and those who can afford to pay for superior comfort. Medical and surgical cases and those of venereal origin have separate wards, and distinct buildings serve for those affected with epidemic and contagious diseases. The incurable are also cared for separately.

One of the most noticeable features of this hospital is the *punkahs*, driven by steam. They are placed above every bed and insure to each patient comfort, a continual circulation of air, and freedom from the annoyance of flies, mosquitoes, and other winged insects.

The average cubic air space for Europeans is 1,817 feet; for natives, 1,122. In July, 1882, two hundred beds were occupied, the medical and surgical cases being about equal in number. Phthisis pulmonalis, with organic affections, the result of chronic malarial disease, largely predominated, while elephantiasis and diabetes were represented by numerous cases. One case of epilepsy was peculiar in being localized to half the body. Enlarged spleen was being treated successfully with fluoride of ammonium. Elephantiasis is operated on by the use of Es-march's bandage, and the healing process is always aided by skin grafting.

Antiseptic surgery has not been adopted in this hospital as a uniform mode of procedure, the attending medical officers believing cleanliness, as a principle, attains most of the advantages of the more complicated procedure.

The earth-closet system has been introduced here as elsewhere in India, and has proved completely satisfactory. From the wards all foecal matter is at once removed to the outer latrines.

A large dispensary practice is provided for also, and the average daily attendance is something over 200, to whom advice and medicine is given gratis.

The hospital and dispensary are under the charge of Surgeon Maj. James Keess, his principal associates being Surgeons King and Maitland and a lady superintendent.

The institution is directly associated with the "Madras Medical College," of which Dr. Keess is principal, and affords to the students every opportunity of bed-side study. The senior students also have ward appointments, and act as clinical clerks, while the next lower grade of matriculants act as hospital assistants.

All the associates of the senior medical officer are eminent teachers, but Dr. Keess is remarkably gifted in this respect, in fact, there are few professors of any European or American college who have a happier faculty of imparting information, clearing away obscurities, making diagnosis and the methods of diagnosis plain, and insisting that each student shall realize what he is about, unwilling to move on until the case under discussion is thoroughly comprehended and properly valued.

On the occasion of our visit the class following Dr. Keess was a small one of male and female students, all Eurasians. They were exceptionally bright pupils and the females seemed to take the lead, giving the readiest and most comprehensive answers.

This institution also gives instruction to nurses, who after six months' service receive a certificate, and are then eligible to admission for instruction into the lying-in-hospital, whence, at the end of nine months, they may graduate as midwives.

The following tables are appended to show the general scale of diet in the hospitals of India, and the force commonly employed, with its remuneration. The surgeons and medical officers in attendance, besides their pay as officers of the hospital, receive a pay in accordance with their military grade.

Table of diets for native patients in the General Hospital, Madras. Articles comprising the different heads of diet for a day.

	Quantity.		Quantity.
Spoon :		Low—Continued.	
Sago.....	ounces.. 4	Onions.....	ounces.. 1
Sugar.....	do.... 2	Barley.....	do.... †
Milk.....	do.... 6	Flour.....	do.... †
Rice for congee water.....	do.... 2	Salt.....	do.... 1
Salt for congee water.....	drams.. 2	Full :	
Milk :		Mutton for curry.....	ounces.. 8
Bread or rice.....	ounces.. 12	Rice.....	do.... 8
Milk.....	pints.. 2	Curry powder.....	do.... †
Sugar.....	ounces.. 2	Country vegetables.....	do.... 4
Rice for congee water.....	do.... 2	Hopper*,.....	number.. 6
Salt for congee water.....	drams.. 2	Bread †.....	ounces.. 8
Low :		Butter of Ghee.....	do.... 1
Mutton in broth.....	ounces.. 6	Salt.....	do.... 1
Bread.....	do.... 12	Tamarind.....	do.... †
Ghee or butter.....	do.... 1	Dhall 3 times per week.....	do.... 2

* Hoppers (dough dumplings) to weigh 2 ounces each when cooked.

† Or bread, 1 pound, omitting the rice.

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*Table of diets for European and East Indian patients in the General Hospital, Madras.
Articles comprising the different heads of diet for a day.*

	Quantity.		Quantity.
Spoon :		Half:	
Sago.....	ounces.. 2	Barley.....	ounces.. ½
Tea.....	do..... ½	Flour.....	do..... ½
Sugar.....	do..... 2½	Salt.....	drams.. 6
Milk.....	do..... 6	Mixed :	
Rice for congee water.....	do..... 2	Coffee.....	ounces.. 1½
Salt for congee water.....	drams.. 2	Hoppers.....	do..... 6
Milk:		Mutton for curry.....	do..... 8
Bread.....	ounces.. 12	Rice.....	do..... 8
Rice (1 ounce for congee water), ounces.....	3	Curry powder.....	do..... ½
Milk.....	pints.. 2	Sugar.....	do..... 1½
Milk for tea.....	ounces.. 6	Milk.....	do..... 6
Butter.....	do..... ½	Butter.....	do..... 1
Sugar (½ ounce for tea).....	do..... 2½	Bread.....	do..... 8
Tea.....	do..... ½	Country vegetables.....	do..... 4
Salt.....	drams.. 2	Full:	
Soojee *.....	ounces.. 4	Beef or mutton.....	ounces.. 12
Half:		Bread.....	pound.. 1
Chicken.....	ounces.. 8	Potatoes.....	ounces.. 12
Or mutton †.....	do..... 10	Tea.....	do..... ½
Bread.....	pound.. 1	Sugar.....	do..... 1½
Potatoes.....	ounces.. 8	Milk.....	do..... 6
Tea.....	do..... ½	Butter.....	do..... 1
Sugar.....	do..... 1½	Onions.....	do..... 1
Milk.....	do..... 6	Barley.....	do..... ½
Butter.....	do..... 1	Flour.....	do..... ½
Onions.....	do..... 1	Salt.....	drams.. 6

Force and remuneration at General Hospital, Madras.

No.	Employés.	Permanent salary.	Total.
		<i>Rupers.</i>	<i>Rupers.</i>
1	Physician, acting.....	1,600	1,425
1	Surgeon (125 rupees house rent included in this).....		1,275
1	Resident surgeon.....		700
1	Assistant physician.....		775
1	Second surgeon.....		775
1	First-class apothecary.....		275
3	First-class assistant apothecaries.....		390
1	Second-class assistant apothecary.....		105
2	First-class hospital assistants.....		110
1	Native superintendent.....		365
9	First-grade nurses, each.....	45	405
6	Second grade nurses, each.....	30	180
1	Lavree woman.....		50
1	Head steward.....		300
2	Assistant stewards.....		90
1	Hospital clerk.....		35
6	First-grade ward attendants, each.....	10	60
14	Second-grade ward attendants, each.....	8	112
15	Third grade ward attendants, each.....	7	105
2	Second-class coolies.....		12
1	Dispensary cooly.....		8
1	Out-patient cooly.....		6
3	Bathmen, each.....	6	18
1	Massahchee (dishwasher).....		7
2	Gardeners.....		10
1	European cook, for Europeans.....		14
2	European assistant cooks, for Europeans.....		16

* In lieu of rice, at the discretion of the medical officer.

† The mutton may be roasted or grilled. In such cases the requisite quantity of ghee may be used, and the barley, onions, and flour excluded.

All extras are allowed on spoon and milk diets only; on the remaining three diets eggs and spirits are allowed at discretion of the surgeon.

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Force and remuneration at General Hospital, Madras—Continued.

No.	Employee.	Permanent salary.	Total.
		<i>Rupees.</i>	<i>Rupees.</i>
1	Native cook		10
1	Assistant cook		6
12	Toties, each	6	72
1	Toty woman		5
1	Head man of servants		10
4	Lascars		24
4	Obobices (washerwoman)		32
2	Tailors		16
12	Bearers		72
2	Peons		14
4	Sweepers		16
2	Coolies		14
	Total		8,014
			12
	Total cost of establishment for one year		96,168

	R.	A.	P.
Total cost of establishment for one year	96,168		
Total cost of diets for one year, as per list annexed	25,757	2	7
Total	121,925	2	7

In the rough the keep of the hospital for a year is 125,000 rupees.
The annual expenditures are—

	<i>Rupees.</i>
General expenditures	125,000
Medicines	9,000
Repairs, &c	5,000
	(\$52,200) 139,000

Diet of each European per day costs one-half rupee = 20 cents; diet of each native per day costs one-fourth rupee = 10 cents.

A resident apothecary with assistants have general supervision of the institution, and at the morning visit of the senior medical officer make the following form of report:

MORNING REPORT FROM THE ASSISTANT APOTHECARY ON DUTY.

GENERAL HOSPITAL,
July 17, 1883—6.30 a. m.

To the Senior Medical Officer, General Hospital:

- SIR: I have the honor to inform you that I came on duty at 2 p. m. yesterday.
- There were 9 admissions and no deaths during the 24 hours.
 - The following accidents and urgent cases were admitted: None.
 - I had to make the following report to the police: None.
 - I visited the wards at the following hours, and found all correct: 2, 4, 6, 9, 11 p. m., and 2, 5 a. m.
 - The nurses were all awake and doing their duty (or otherwise).
 - I detailed the clinical clerks for duty in the following order, and found them during my visits all attending to their work (or otherwise): Persimbam and Nowrojee, 8–11 p. m.; Ragavenduram and Kenny, 11–1 a. m.; Athostan, 1–3 a. m.; Parthasarthey, 3–6 a. m.
 - I visited the latrines at 5 a. m. and found them clean (or otherwise).
 - I detailed the following patients who presented themselves during the night: None.
 - The following cases of contagious diseases have been admitted during the past 24 hours:

I have the honor to be, sir, your most obedient servant,
VERDAPAH NAIDU,
Apothecary on duty.

Morning statistics.

	Medical.		Surgical.		Total.	
	Euro-peans.	Natives.	Euro-peans.	Natives.	Euro-peans.	Natives.
Remaining 6.30 a. m. yesterday.....	38	59	28	73	66	132
Admitted since.....		5	1	3	1	8
Discharged.....	1	3		3	1	6
Died.....						
Remaining at 6.30 a. m. this morning.....	37	61	29	73	66	134
Total.....	98		102		200	

The benevolent institutions of Madras comprise many charity and industrial schools for boys and girls, a civil and military orphan asylum, a Roman Catholic orphanage, a lunatic and Magdalen asylum, a Government work-house, the Gordon Refuge for destitute girls, and two native charities for the poor and infirm, known as the Monegar choultry, and the Vencatagiri choultry. With these may be classed the leper hospital, where protection and food alone is necessary, though medical experiments are often tried upon the incurables. The gurgim oil, it is stoutly maintained by some, has occasionally given permanent relief.

The educational institutions are principally the Madras University, the Presidency College, the Civil Engineering College, the Government Normal School, and the Medical College with its auxiliary school. Besides these there are many sectarian colleges of great merit, and numerous parish schools, a model farm, and, in connection with it a school of agriculture.

The university and colleges named are all supported by the Government, as are many of the higher non-sectarian schools.

The Observatory and Agrihorticultural Gardens may also be embraced in the educational institutions of the city. The gardens are among the finest in India for purposes of botanical study, and horticultural experiments are being constantly conducted in the interests of Indian production. The observatory is well appointed and contains a fine transit and mural circle.

The markets of Madras are well supplied with every kind of meat and poultry, vegetables and fruits from all zones. An official inspection insures that only healthy produce shall be sold.

The food of the natives and their beverages are in no respect different from other parts of India, the remarks made in regard to Bombay applying equally to Madras.

The intoxicating drinks are palm-tree toddy and arrack, which are extensively sold, the toddy shops numbering 3,000 and the arrack shops over 100, while 107 other places are licensed to sell any variety of liquor, wine, or beer. Hence, liberty in this port resulted in much drunkenness, but without any serious results. No cases of venereal disease reported for treatment.

The Madras Medical College, founded in 1806, is a department of the university, and both supported and controlled by the Government of the Presidency. Being a representative school, affording a very complete course in every branch of medicine and surgery, as well as the closely allied sciences, some space will be devoted to an account of the institution and its system of study, as illustrative of medical education in India.

The college building is admirably located in midst of beautiful grounds. It has commodious and well ventilated lecture rooms, and every facility for illustrating the subjects taught, with ample material for the study of practical anatomy. The museum contains 1,319 pathological specimens, and an extensive collection of fruits, models, manikins, and botanical specimens. The printed catalogue, arranged, by Surg. C. Sibthorpe, professor of pathology, is not a mere dry list, but is a classified arrangement, with instructive letter-press. Its general index divides the contents into sections, termed series. Nos. 1 to 15 classify diseases and accidents with reference to the osseous system, abdominal regions and organs; No. 16 includes tumors; No. 17, malformations, misplacements, and diseases of ovum; No. 18, calculi, sediments, concretions, and foreign bodies from urinary and digestive organs; No. 19, entozoa; No. 20, drawings; No. 21, casts and models. Under each heading the entries are numbered separately, and the series is introduced with a special index. But the most peculiar and excellent feature of this catalogue is, that all pathological specimens possessing a peculiar interest have a history of the case appended in detail, with the name of the operator and donor.

The library contains 5,817 volumes, with a supplementary division containing 2,003 volumes for the exclusive use of students, and, that they may be encouraged to avail themselves of this privilege, a comfortably furnished reading and study room has been provided.

The college is under the charge of Surgeon Major Keess, M. D., M. R. C. P. L., but under the control of the directors of public instruction.

Lectures are given by competent teachers to the senior and second departments, as follows: Medicine, surgery, anatomy, physiology, pathology, materia medica, chemistry, midwifery, comparative anatomy, diseases of women and children, medical jurisprudence, dental surgery, botany, ophthalmology, hygiene.

The academical year extends from October 1 to June 30, and is divided into a winter session of six months and a summer session of three months.

The fees are very moderate, the cost of instruction being but 500 and 400 rupees (\$200 and \$160) for the five and four year courses of study. There are, however, many free scholarships, and female students only pay the registration fee of 5 rupees.

During the session of 1883 211 students were in attendance on the lectures, mostly Eurasians, including eight females, or, as they are designated, "lady students."

The collegiate co-education of the sexes is receiving much attention in India, and especially in connection with the medical schools, the object being to provide Hindoo women with skilled attention, which the prejudices of caste and sex prevent them from securing at present. Many Eurasians have already graduated from this school, and the faculty have been especially gratified with the success of Miss Scharlieb, who, after a course of three years at the Madras College, went to London and graduated with high honors at the London University.

The system of coeducation at Madras has been pronounced a perfect success by all those who have had it under observation.

The college is divided into two departments: the senior or university department and the junior or second department. For entrance into the senior department the candidates must be sixteen years of age and have passed the first examination in arts of the University of Madras; and to attain the degree of M. B. and C. M. a course of five years' study is required.

In the second department a course of four years only is required to attain the degree of licentiate in medicine and surgery, the first of which may be pre-collegiate, which is generally passed in the capacity of a hospital apprentice in any hospital designated by the surgeon-general. A colloquial knowledge of Tamil, Hindoostani and Telegu dialects, as well as English, is made obligatory with this class of students.

This second department trains for civil and military service the class of practitioners already spoken of, termed apothecaries, who have charge of dispensaries throughout the Presidency, and fill various positions requiring a certain amount of medical and surgical skill without having imposed upon them the higher responsibilities.

There was formerly a third department for the instruction of those who receive appointments as hospital assistants, but this has lately ceased to exist, on account of the general lack of early educational advantages amongst the students, which would not enable them to fully comprehend the lectures delivered by the professors. This department has therefore been transferred to the auxiliary school of Royapuram.

Class examination, are held by all the professors throughout the session, but sessional examinations have been abolished, save those for the first degree. The class examinations are in the proportion of one to every three lectures, and each course of lectures is closed with a conversational course on the same subject.

The daily order of instruction, as regards the sequence of lectures, is about the same as in our own medical schools, and lectures are given every hour from 10.30 a. m. The hours from 6 to 10 a. m. of the winter session are devoted to dissection, but in summer practical anatomy is omitted. Saturdays and Sundays are holidays. Daily attendance either in the dispensary or surgical and medical wards of the hospital or eye infirmary are provided for, and so regulated as to give to the students the greatest advantage in the immediate illustration of the subjects of study.

The two-year students of the second department are submitted to a primary examination at the end of this period of study, and at the end of their third year are again examined, this examination being conducted, not by the professors of the college, but by officers appointed by the Government.

Besides these two departments there is also a class for instruction in pharmaceutical chemistry, materia medica, and pharmacy, known as the chemist and druggist class.

At present the college is not self-sustaining, but each year its income increases. The last report, 1882-'83, shows the expenses to have been about 75,000 rupees, and the income only 14,000 rupees (\$30,000 and \$5,600.)

VIZAGAPATAM.

Vizagapatam (latitude, 17° 41', longitude, 83° 77'. 5' east), is an important city of a large district bearing the same name, and at the mouth of a river also having the same designation. Sand hills stretch along the coast, and low flats extend from the river-bed, in which locality is situated the "Pettah" or native town. Two almost parallel ranges of wooded hills run inward from the sea, and other broken ranges complete the inclosure of a level amphitheater. On the range toward the north Europeans have selected their residence, and in this situation, known as "Waltair," are located the barracks and the bungalows of officials belonging to both the civil and military establishments.

The soil of the valley is a red alluvium; that of the hills a formation

medical officer. The jail is built upon the pavilion plan, and there is a house of detention near the entrance gate, where patients under suspicion of being affected with any epidemic or contagious disease, or of having been exposed to contagion, are detained until the disease develops or during the recognized period of incubation.

CALCUTTA.

Calcutta (latitude $22^{\circ} 33' 25''$, longitude $88^{\circ} 19' 40''$ east), the "city of palaces," is situated upon the eastern bank of the Hoogly, one of the many streams forming the delta of the Ganges, and 60 miles from the sea. It is the capital of the Bengal Presidency, the seat of the supreme government, and the commercial metropolis of India.

The city extends along the river bank for a distance of nearly 5 miles, and has a width of 2 miles from east to west. Upon the water front there is a quay of 2 miles in extent with artistically built ghauts or landing-places, the chief ones being Princeps ghaut and Baboo's ghaut. They are in the form of Grecian propylæa, the former being of the Doric and the latter of the Ionic order of architecture. Here there are no business offices, stores, or warehouses, but a succession of beautiful villas, the dock-yard of the Indian navy, public gardens, and an extensive plain known as the Maidan. This is a reservation employed as recreation grounds, and embraces the esplanade, a favorite promenade, and the race-course. Here also is located the immense fortress of Fort William.

The Chowringee road, the eastern boundary of the Maidan, 2 miles in length and 80 feet broad, is a row of palaces, and the advanced portion of the Chowringee district in which the foreign population reside. This district is regularly laid out with broad streets, well macadamized, and the buildings are well constructed of brick, highly ornamented with stucco. They have deep verandas looking towards the south, whence the cool evening breeze blows, and each stands in the midst of luxuriant gardens.

The northern portion of the city constitutes the native quarter, a region of narrow streets, and lofty buildings. The houses are two and three stories in height, built of brick around a central court yard, the lower stories generally occupied as bazaars. There is, however, a large outlying district in which will be found only the "bustees," or native villages. These are groups of huts, built of mud and straw, grouped around tanks, which supply water for culinary purposes and yet receive all the filthy drainage—the proper abode of cholera.

The public squares are numerous and generally contain tanks fed by springs, which are surrounded by trees and shrubbery. The Strand road is the beautiful promenade along the river bank leading to the Eden Gardens, a most attractive park. It is laid out so as to produce a succession of charming landscapes formed by artificial elevations, trees, and shrubbery, and the happy management of water made to form ponds, water-courses, and fountains.

Beyond the Eden Gardens is the business section of Calcutta, where are the jetties for landing merchandise and the warehouses for storing it. The river is at this point three-quarters of a mile in breadth and gives good anchorage in 6 and 7 fathoms of water. The center of this business quarter is Dalhousie Square.

The public buildings rank as the most beautiful in India. Within an inclosure of six acres to the north of the Maidan is situated the "Gov-

ernment House," a huge palace occupied by the viceroy. It is a noble building, with four wings, its center surmounted by a dome.

The new building for the high courts is, perhaps, the finest of the public structures in Calcutta. It is of large proportions, built of brick, faced with stone, and is a fine example of the florid gothic. The mint and post-office are other fine structures, and the ecclesiastical edifices, especially the two cathedrals, are most of them fine specimens of architecture. The Protestant cathedral is a sort of pantheon, where honor is done to the memory of England's heroic dead, and its vestibule and transept are crowded with memorials in stone. St. John's church pays similar honors to its dead, and in the mausoleum a slab to the memory of William Hamilton, the famous surgeon of the East India Company's service, attracts attention. It bears the following inscription :

Under this stone lies interred
the body of
WILLIAM HAMILTON, Surgeon,
who departed this life December 4th, 1717.

His memory ought to be dear to this nation for the credit he gained in curing Ferrukseer, the King of Indostan, of a malignant distemper by which he made his own name famous at the court of that great monarch, and will, without doubt, perpetuate his memory, as well in Great Britain as other nations of Europe.

The inscription is repeated in Persic.

A similar tablet records the abilities of another eminent medical man, Dr. Twining.

Strange to say, Calcutta has no temples within its limits, all worship being performed in the household or on the river banks, where the waters of the sacred Ganges flow. Near the city is, however, the shrine of the goddess "Kali," a temple of celebrity, where thousands flock on certain days, and near which is the burning ghaut where the dead are cremated. From Kali-ghaut, Calcutta derives its name.

The city is built upon ground formed from alluvial deposits, resting upon stratifications of clay and sand, and is only 18 feet above the level of the sea.

The latest census gives a population of 288,817 males and 144,402 females; total, 433,219; clasified as follows, according to religion: Hindoos, 278,762; Mohammedans, 124,430; Christians, 26,430; Brahmos, 423; Buddhists, 1,721; Jews, 982; Parsees, 141; Sikhs, 278; others, 52.

The suburbs contain 147,205 males, and 104,234 females; total, 251,439, includings troops, prisoners, and the floating population on the river and canals.

As regards race, the population comprises the native Hindoos, English, Eurasians, Portuguese, Americans, Greeks, native Parsees, Jews, and Chinese. The term "Eurasian" was invented by the Marquis of Hastings, to represent the offspring of a Hindoo mother and a European father. They have not generally been esteemed as an ambitious or energetic race in the past, probably from local prejudice, which has always ostracised them socially. This feeling is now gradually disappearing, and the Eurasians are found filling responsible offices in the civil and military establishments, and taking advantage, both male and female, of the educational advantages which now present themselves throughout the peninsula.

What has been said previously in regard to prevailing winds and seasons in the Bay of Bengal, applies to Calcutta as well, though, being somewhat removed from the coast, its summer temperature is higher

and its winter a trifle colder than at Madras and other cities directly on the sea, as is shown in the following table, deduced from records:

	Degrees.
Highest temperature (May, 1873)	106
Lowest temperature (January, 1874)	51. 4
Average temperature of year	79. 4
Average temperature hot months	84. 5
Average temperature rainy season	83. 3
Average temperature cold season	71. 5

During the hot months the effects of intense heat are much mitigated by the evening sea breeze, and by occasional shifts of wind to the north-west, followed by severe thunder storms.

Between June and October occurs the rainy season, the average fall being about 66 inches. The rain falls almost daily. The atmosphere is constantly damp; everything becomes mouldy, and depression of spirits, with general debility, attacks every one. Then it is that all who can fly to the foot-hills of the Himalayas, and remain until October or November, especially avoiding the closing weeks of the rainy season, which is a most pernicious period for all Europeans.

Simla is the fashionable and vice-regal resort, and Darjeeling that of the invalid. At the latter place is located the Eden Sanitarium, where it is proposed to supplement the healthy influence of mountain air with the comforts of a home and the best medical attention, the whole under the control of a board, of which the senior secretary of the Government of Bengal is president.

Three classes of patients are received, and the charges, including everything save wine and spirits, are 8, 4, and 1½ rupees per day (\$3.20, \$1.60, and 60 cents). The first-class patients, for this moderate sum, have a suite of rooms, embracing a private bath and closet. An annual subscription of 100 rupees (\$40) entitles the subscribers to a reduction of 25 per cent. for themselves and their employes, and the same privilege is accorded tea-planters on the payment of 60 rupees (\$24).

The municipality of Calcutta comprises 75 commissioners, 50 being elective and 25 appointed by the lieutenant-governor of the Presidency. The chairman is appointed governor, and the vice-chairman engineer; health officer and secretary are appointed by the commissioners themselves. This body has the usual control over the food, water supply, drainage, lighting and street cleaning, with the general sanitary affairs of the city.

The drainage system has been a most elaborate and costly work and extends to every portion of the city. All the drains are subterranean, connected with the river for purposes of flushing, and eventually the whole sewage is pumped into an enormous reservoir, whence it flows to the salt lakes, 3 miles to the northward of the city. The water supply is obtained from the Hoogly at a point some miles above the city, where it is pumped into artificial lakes, and, passing through gravel filters, is conducted by a 42-inch iron main to the city. The reservoir at Tallah and another at Wellington Square distribute the supply through 120 miles of pipe.

The daily amount furnished by the system is 7,500,000 gallons, which is not sufficient for the population; so that, from necessity, non-filtered river water, as well as that from the old tanks, is largely used. The

At sea river water is distributed through 25½ miles of pipe. This is a supply for watering and cleansing the streets, which are kept scrupulously clean save in some of the more densely populated native quarters. The street sweepings are carried by rail to the salt water

lakes, 12 miles from the city, and employed in the reclamation of land, more than ten thousand car-loads being transported there in 1882.

The hospitals of Calcutta are as numerous as could be desired. The Medical College Hospital, Presidency General Hospital, Mayo Hospital and Campbell Medical School being the principal ones.

The Presidency General Hospital is the oldest of these institutions and is open to seamen and Europeans of all classes. Aliens are charged one rupee (40 cents) per day for private accommodations.

The Mayo Hospital, for the care of the native race, is an old institution, dating from the last century. It is now located in a new and handsome structure, two stories in height, and gives accommodations to 120 patients, and out-door relief is furnished through four dispensaries. This hospital is well endowed, yet the charity demanded is so large that there is a semi-annual deficit which it is necessary to obtain by subscription.

The burning ghaut, where the Hindoos dying within the city are cremated, is located on the banks of the river adjacent to this hospital.

The Campbell Medical School Hospital, devoted to paupers, is supported by the municipality, and offers every opportunity of chemical study to the native medical students.

The Medical College Hospital is one of the finest institutions for its purpose to be found in any country. The building is of stone, with a noble portico in the Corinthian order of architecture, and comprises three lofty stories of well lighted and ventilated wards, giving accommodations to 300 patients. The capacity is, however, inadequate to meet the demands and a large addition is now in process of construction, more especially intended as a lying-in department. It has been determined that all which money can furnish shall be supplied to make this a model department to the world. The eye infirmary, an adjunct of the hospital, is located in another portion of the city. Six thousand out-patients are treated here annually, and accommodations are provided for 600 in-patients. Dr. McLeod and Dr. Ayre are the principal surgeons in attendance, men of great skill and of European repute. Strangulated hernia is very common among the natives and the admissions to the hospital numerous, with about 40 cases requiring operation annually. The ice treatment is found successful in the majority of cases.

In operating, Dr. McLeod's special operation is that of cutting off the sac, which has always resulted satisfactorily. Elephantiasis is very common and operations are frequent. The method is now invariably with the use of the Esmarch bandage. In the case of scrotal elephantiasis, the tumor is suspended for some hours before the operation. The elastic bandage is then applied, and the cord, or elastic tubing, is held in place, after the bandage is removed, by means of an abdominal belt having many loops along its inferior border, from which tapes are carried to and tied to the cord in sufficient number, and in such a manner as to keep the circle of tubing tightly adapted to the parts whence the tumor derives its supply of blood. The after-treatment is the application of thin muslin bags (cheese cloth), filled with sawdust, and saturated with a weak solution of corrosive sublimate. A case of resection of both elbow joints was remarkable in the nearly perfect use of the fore-arms, attained by the patient in a comparatively brief period of time. Cholera is constantly under treatment, and dysentery likewise. In the latter disease, large doses of ipecacuanha is the invariable remedy. In cholera, iced champagne, ice water, chicken-broth, and lime-water and milk are used plentifully. Acetate of lead, and opium, and chloral hydrate are given as astringents and anodynes, and counter-

irritation is employed to the abdomen and cardiac region by means of sinapisms, and turpentine stripes; bags of hot sand, or salt, are applied to the extremities and spine, while a diligent friction is continuously kept up. Antiseptic surgery is employed in all major operations.

Although the extension of medical education in India, for which the Government has made ample provision, the establishment of hospitals and dispensaries throughout the land, offering opportunities for the native races to enter the profession, has resulted in almost suppressing the ancient Hindoo practices, and substituting for them our own scientific and better founded methods; still, the native system of medicine, if it can be so called, has not been entirely ignored, and many ancient remedies find a use in modern practice, especially in the outlying districts and every place in the Indian pharmacopœia, applied, however, no longer empirically, but with a full knowledge of their therapeutic value.

The great majority of these have also found recognition in our own dispensaries, where a full account will be found of their botany, preparations, and mode of administration. There is some faith still retained for chaalmugra oil as a cure for leprosy, but, as regards the vaunted Gurgum oil, it seems only to have benefited the lepers by producing absorption of indurations, and therefore local improvement, the result of persistent friction. Other oils, especially Til oil (from seeds of *Sesamum indicum*), have been found equally efficacious. In this connection it may be mentioned that carbolic acid vapor baths, as recommended by Surgeon-General W. Johnston, M. D., are now largely used in the treatment of leprosy, and the results have been very flattering of its proving a controller, if not a curer, of the disease.

As an anti-scorbutic, a preparation of dried mangoes has recently been introduced under the name of *am-chur*, and is highly praised by Dr. Clarke, deputy surgeon-general. The ration recommended is half an ounce, equivalent to a ration of one ounce of lime juice. Dried bananas are also employed as an anti-scorbutic food. The toddy obtained from collecting the exudations from an incision in the spadix of various palmacæ, and which when fermented is largely used as a native drink, is employed medically in the form of a poultice. This is prepared by mixing the toddy with rice-flour, and heating it until, through fermentation, the mass becomes light. It is said to be a most excellent poultice for general purposes, and particularly adapted to gangrenous or sloughing surfaces and indolent ulcers.

Conjee water is another preparation of Indian origin used throughout the East as a febrifuge drink, and nutrient, and the term "conjee-house" is often applied to the infirmaries. It is prepared by boiling an ounce of rice for twenty minutes in a quart of water, to which is added lime juice, sugar, and any desired flavoring essences.

Pish pash is another preparation of rice cooked with chicken. It is in effect a strong chicken tea prepared for invalids and a common diet of European children.

The medical college buildings are adjacent to the hospital, the latter, however, containing the operating theater and council room of the faculty.

The college was founded in 1834, and has grown into great proportions. There are two large lecture rooms, each capable of accommodating 500 students, a museum, laboratory, and library, and residence for the medical staff, now numbering fourteen professors.

The course of study is five years, and the graduates in the university department receive the degree of M. B.

The annual attendance was formerly not less than 1,500 in every department.

At present there are two auxiliary medical schools—the Campbell Medical School, of Seeldah, and the Temple Military Medical School at Bankipore, which has reduced the number to 500, and abolished the junior instruction.

The diseases of Calcutta are pre-eminently malarial affections, prevailing at the beginning and close of the rainy season. Dysentery and diarrhoea. Dengue is common, and a full account of an epidemic of this disease on board the *Juniata*, which had its origin in the Hoogly River, has been already introduced. Cholera is endemic, and this is not to be wondered at when we consider the manners and habits of the natives, especially when they are compelled to drink tank water, or even river water, contaminated with every form of filth. At about the period of our visit to Calcutta there was a fatal epidemic of the disease in a village on one of the branches of the Ganges not far from the metropolis. It was traced directly to the contamination of the river water with the sipage from a cemetery, where those dying of cholera, in a previous epidemic had been buried.

Of the educational institutions, the University of Calcutta takes the lead, embracing in its system the various departments properly belonging to a university, including the medical college, the Sanskrit college, and a civil engineering department. The *Madrasa* is a special school for teaching Arabic and subjects peculiar to the Mohammedans, as well as Persian and English. The *Martinidre* is an institution founded by General Claude Martin, and amply endowed by him. It educates both boys and girls, and afterwards provides for securing them a trade or profession, and for seeing that they are properly married. The *Doveton* institution provides a Protestant education for 500 young ladies.

There is a numerous list of colleges and free schools, both sectarian and secular, for the instruction of both native and European children, male and female, and of every religion or sect.

St. Xavier College, under the charge of the Jesuits, is an admirable institution, providing a superior education for 500 male students, and the *Lorretto* school furnishes an education of a high order for Catholic young ladies.

The General Assembly of the Church of Scotland has a large institution under its control, which contains a school and college organization.

The Indian Museum is a fine and commodious building in the Italian style, and contains a large collection illustrating natural history, ethnology, and archaeology. The geological survey has here its offices, and displays its mineralogical and palæontological collections.

The Asiatic Society was founded in 1784, and has accomplished a great work in its Asiatic researches, especially in the regions of history and philology. It has a library of 15,000 volumes, containing more than 5,000 Sanskrit, Arabic, Persian, and Hindostani, Burmese and Nepalese manuscripts, many of them part of Tippoos Sultan's library. It publishes a journal, and also the *Bibliotheca Indica*, a reproduction of Oriental works in the Sanskrit, Arabic, Pali, and Hindoo languages.

Besides hospitals and schools the benevolent institutions are very numerous. There are several orphanages, many charitable societies, a house offering shelter to destitute women, St. Vincent's Home, the De Souza Home for Destitute Eurasians, and the Calcutta Sailors' Home, under the control of the local government. The latter is a refuge for

distressed seamen, as well as a boarding-house. The accommodations are excellent, and the object of the committee, represented by its superintendent, is to supply comfortable, clean apartments, good, healthy food and drinks, with good reading matter, at moderate prices, and to protect "Jack" in every way from the sharks that beset his path on shore. The price of board, first class, is 3s. per day; second class, 1s. 4d. The bar is opened at regular hours, and the sale of beer and liquors is judiciously controlled.

The two jails of Calcutta are of great extent, and average 3,000 prisoners. Two-thirds of these are engaged in various employments, such as coir, jute, and cotton spinning and weaving, oil-pressing, foundry and blacksmith's work, carpenters, printing, and lithographing.

The "Municipal" is the principal market, and is well supplied with all Indian produce. It is a commodious structure, and extends 300 feet on each side of a quadrangle. What has been written of the produce for sale in the markets of Bombay applies equally well to those of Calcutta.

The description already given of the domestic habits, food, drink, dress, and morals of the people on the western side of India applies with little variation to those on the shores of the Bay of Bengal.

The Botanical Gardens, dating from 1786, are situated on the west bank of the Hoogly, a few miles below the city, and extend for a mile along the river, occupying 272 acres. The most striking features of the gardens are the avenues of palms and mahogany trees, the orchid house, the conservatory, 200 feet long, and the great banyan tree, the largest in the world. The trunk of this tree measures 51 feet, and from its spreading branches nearly 200 aerial roots descend, which occupy a space 800 feet in circumference.

These gardens have been of great service in the acclimatization of useful plants, especially tea and the cinchona, Assam being indebted to these efforts for its now very large tea industry, and Suakim for its extensive cinchona plantations.

Cinchona cultivation.

Throughout the colonies established by European nations on the continent of Asia and its adjacent islands, and from the first day of their colonization there has been one constant enemy to fight—more inhospitable than the conquered races, more deadly than the battles waged between the natives and their conquerors, counting its daily victims by companies, and its yearly victims by battalions, and to contend with which but one single weapon availed to accomplish the defeat of this great destroyer. The enemy was, and is, the pernicious malaria of the Asiatic alluvial plains and river bottoms; the weapon of defeat, the Jesuit's bark and its essential principles.

It has been said indeed that the East Indian rule of Great Britain was dependent on cinchona bark, and certainly, from the earliest colonial days, she has only maintained her Indian armies of occupation in a state of efficiency by a lavish use of the great febrifuge, standing, as it were, in the category of daily rations.

While much has been done during the century of British rule in improving the condition of her healthy districts by drainage and other sanitary measures, and fortifying both foreigners and natives against the malarial poison by seeing that they are provided with better hygienic surroundings, are properly clothed, and appropriately cared for in

sickness, throughout the entire colonial possessions there is still a necessity for the largest use of cinchona bark and its derivatives.

As the century has advanced the crude powder of the bark has given way in India, as throughout the civilized world, first to various liquid preparations, and these in turn have been displaced by the alkaloids, which now form one of the most important articles of international commerce, the amount of annual production being not far from a quarter of a million pounds and its value over £2,000,000 sterling.

In the Indian peninsula the consumption of cinchona bark, in one form or another, has always been a gigantic one, and the expense enormous. It has followed as a natural sequence that the Government should endeavor to obtain these necessary supplies more cheaply, which has occasioned much investigation of the cinchona area of South America, and this has very naturally led to an importation of the plant with a view to its acclimatization.

Although cinchona plants were brought to England as early as 1707, they were regarded merely as botanical curiosities, and the conclusion was arrived at that the virtues of the plant resided in the seeds.

The first attempt at acclimatization was by the French in Algeria, about the year 1849. The Dutch, in the interest of their Dutch East Indian possessions, instituted their efforts to the same end in 1851; Horskari, their botanist, successfully transporting to Batavia both South American plants and those grown at the Jardin d'Acclimatization at Paris. The English followed in 1850, and it is more particularly to the exertions of Clements R. Markham, C. B., F. R. S., that the enterprise has been such a complete success, whose exertions during a period of twenty-five years have enabled British India to reap a rich reward from his perseverance and great scientific abilities.

Mr. Markham visited the cinchona forests of South America and gave a careful study to the subject with a view to the selection of such varieties as could be furnished with similar climatic conditions to those they enjoyed in their native region of growth. The result was a determination to introduce the following species:

1. South Peru and Bolivia :
 C. calisaya (yellow bark).
2. Huanuco region:
 C. mitida (gray bark).
 C. micrantha (gray bark).
 C. peruviana (gray bark).
- Loxa region :
 C. officinalis (crown bark).
4. Limon region:
 C. succirubra (red bark).
5. Pitayo and Caquetá regions (Colombian barks):
 C. pitoyensis.
 C. lancifolia.

The *Cinchona calisaya*, and the *Cinchona officinalis* are the richest in quinine. The Colombian barks contain quinidine, the *C. succirubra* is richest in cinchonidine, while the Peruvian banks yield chinchonine largely.

The Kew Gardens were first employed for the purpose of starting the young seedlings, which were exported to India and Ceylon in Wardian cases, but later the botanical gardens of Peridinea (Ceylon), Madras, and Calcutta also were employed in the raising of young plants. Many were also directly imported, but the percentage of loss was so consider-

and the expenses so great, the method of raising from the seed was concluded to be the most satisfactory and economical.

In the selection of a site for the new plantation it was determined that the Nilgiri Hills, in natural features, geology, climate, and humidity, presented the nearest approach to the elevated regions of South America where the cinchona forests abound of any point in India south of the Himalayas. These hills are a part of the Western Ghats, extending from latitude $11^{\circ} 10'$ to $11^{\circ} 32'$ north, and longitude $76^{\circ} 59'$ to $77^{\circ} 31'$ east, and their highest peak is a little short of 9,000 feet in elevation. The geological formation is syenitic granite with veins of basalt quartz and half decomposed calcite. The soil is extremely rich, composed of vegetable mold and disintegrated rock, the surface undulating, the streams abundant, and the hills covered with a thick forest growth as well as a dense jungle.

Having so great an elevation, it was easy to select sites at various heights for the purpose of adapting each variety of cinchona to that point where it would have a climate corresponding to the region of its original growth. So here in the Nilgiri Hills of Western India cinchona cultivation was commenced on a large scale under the immediate scientific superintendence of William Graham McIvor. Year by year the area of plantation was extended, and the originators of the grand enterprise patiently waited for the results without any doubt of complete success.

Without entering into tedious details of the various drawbacks and obstacles always besetting such enterprises, suffice it to say that, after eighteen years of persevering labor, at length their efforts received the crown of perfect success, and India soon became independent of the world for one of her greatest necessities.

One of the results of these labors was to show that the *C. succirubra* and *C. officinalis* had become *completely* acclimatized, and were most worthy of cultivation on a large scale. Also, that several native hybrids gave promise of attaining celebrity for their special yield of alkaloids; one variety, to which the name *C. lanceolata* has been applied, yielding 11 per cent. total alkaloids, and of quinine 7 to 10 per cent. Another, the *C. pubescens*, yielded 12.2 per cent. total alkaloids.

During the period of development of the Nilgiri plantations others were started upon the elevated lands of Southern India, in British Sikkim, amongst the foot hills of the Himalayas, in British Burmah, and especially in Ceylon, all being uniformly successful. Those of Ceylon, with the Royal Botanic Gardens of Peridineja as their nursery, are equally important with those of the Nilgiri district, the mountains of this island having proved to be an especially favorable location for cinchona cultivation.

The *C. succirubra* and the *C. officinalis* continue to be the most esteemed varieties in all these plantations, and from them, practically, the commercial alkaloids are obtained. The new cupra bark (*Cupraquina* or *Cinchona cuprea*), a species of remifa, has recently been imported into Ceylon, and planted in the gardens of Peridineja. Though the percentage of quinine is small, it is easily pulverized, which renders it a favorite with manufacturers as well as for being free from cinchonidine. This is the variety of cinchona so highly vaunted in the recent work of Professor Flickiger, translated by Professor Power of the University of Wisconsin.

The harvesting of the bark is effected in two ways. The first method is by falling the tree when eight years old and permitting a new tree to spring from the stump. The second and most desirable is termed "the

mossing process." In this method the bark is removed in rings, leaving alterations of bark untouched, and binding the wound with moss or covering it with clay. At the end of twelve months, the remaining rings of bark can be removed, which in their turn are mossed; and after the lapse of another period of from ten to twelve months the rings of bark originally removed are found to be reproduced and ready for detachment. This process can be repeated indefinitely, and seems to increase the percentage of alkaloids.

It is of the greatest importance that the febrifuge offered for sale to the masses should be furnished as cheaply as possibly, and experiments carefully conducted have determined that the associated alkaloids, prepared in the following manner, is the best and cheapest form in which the virtues of the bark can be offered. For this preparation, we are indebted to the Dutch chemist, Dr. de Vrij. The method of preparation is to macerate the bark in dilute hydrochloric acid, precipitate with caustic soda, dissolve the alkaloids again in hydrochloric acid, filter from insoluble matters, reprecipitate, wash, dry, and grind. In addition to the well-known alkaloids of the principal barks, two new products have been determined by Hesse as existing in the Indian *O. succirubra*, to which the names, quinamina, and paracina have been applied.

C. succirubra yields 9.11 per cent. of alkaloids, of which one-sixth to one-third is quinine. In other varieties it has been fully demonstrated that cultivation and protection, as well as the "mossing" system of gathering the bark produces an increased percentage of all the alkaloids.

The resulting precipitate of the process of Dr. de Vrij is termed quinetum, and is sold in the bazars at 1 rupee (40 cents) per ounce, while quinae sulphas brings about $7\frac{1}{2}$ rupees, or \$3 per ounce. The dose of quinetum is generally conceded to be a larger one than that of quinine, through many Indian medical officers deny such a necessity, but all agree that its effects are as potent as those of the unassociated quinine.

Quinetum is a white powder when first prepared, assuming a yellow hue at a later period. Eight grains are generally considered equivalent to 5 grains of quin. sulph.; usually administered in dilute lemon-juice, in which it is soluble.

The preparation from the northern plantations is known as "Darjheeling cinchona alkaloid" and "cinchona febrifuge." The objection to all these combined alkaloids is that they have a somewhat disagreeable odor, and often nauseate.

The statistics of production obtainable only reach the period closing with the year 1880.

During the year 1879-1880 the yield of bark for India and Ceylon was 1,172,000 pounds. Java, during the same period, produced only 70,088 pounds, but the Javanese product is noted for its superior quality.

The revenue of the British Government from its cinchona plantations is very large, the product of one plantation of less than six hundred thousand trees sold in 1878 for £80,208, the expenses being but £5,000, and it is now considered the most important industry of Ceylon.

Snake-bites.

An account of India would be incomplete without some mention of snake-bite, for this danger is not confined to the interior jungle—though there the danger is greatest—the deadly serpents lurking in the grounds of fashionable villas along the Hoogly, in the suburbs of all the

larger cities, in the pleasure grounds, parks, and botanical gardens. Their presence is constantly apprehended, so that daily precautions are taken to avoid the danger, houses being always surrounded by coarse gravel, which snakes will never cross, and the room as well as the bed is always carefully searched before retiring. A light is always kept burning during the night in the sleeping apartment, and no European would think of rising and moving around the room without a covering for the feet and a cautious examination of the floor.

There are many poisonous sea and fresh water snakes to be met with in the Bay of Bengal and the Indian Rivers, but the principal snakes to be feared are those of the land, which are classified under the ophidian orders of *Ophidia viperiformes* and *Ophidia colubriiformes venenosi*. Sir Joseph Fayrer, the most learned investigator of this subject in the present day, terms the latter Hæmatophidia, and divides them into three suborders.

The first suborder is without grooved or perforated fangs. Those belonging to the second suborder are provided with a premaxillary, erect, immovable tooth, either grooved or perforated; and those of the third suborder have a perforated erectile fang with no other teeth.

Of the "death snakes" the most important are the cobra (*Naja tripudians*), the tic-polonga (*Daboia russellii*), only found in Ceylon, and the krait (*Bunjarus cerulius*). A more deadly snake exists, the hæmadryad (*Ophiophagus elaps*), but though most to be dreaded it is not very commonly met with, yet when encountered is not easily escaped, as it attacks man, and moves with great velocity. It is a snake-eating snake, and of great size as compared with the others named, being often 9 feet in length.

The krait is the most destructive to human life probably, as it is found everywhere, in the fields and the jungle, on the lawns, in the hut and the house. It is not a large snake, is prettily marked with purple and white, and, though not aggressive, fights fiercely when attacked.

Of the snakes whose virus is less fatal, the principal ones are the *Echis carinata*, a viper about 2 feet in length, which coils and projects itself like our rattlesnake, and the various Crotalidæ, or "pit vipers," which are only fatal to the young and weakly.

The tic-polonga is only found in Ceylon. It is of a chocolate color, surrounded with black rings, bearing white margins. It is a viper, and its poison produces the effect of all viperine poison—*fluidity* of the blood. Its bite is more rapid in its effect than that of the cobra. Fowls often die in thirty-five seconds, never living but a few minutes; with dogs it is sometimes fatal in seven minutes, cats die in fifty-seven minutes, and horses in eleven and one half hours. In man death may occur in an hour.

Snake poison is a yellow, slightly turbid, odorless, structureless plasma which will endure a heat of 224° without a destruction of its properties. The poison of the vipers (*Ophidia viperiformes*) contains *viperine*, isolated by Prince Lucien Bonaparte. It produces fluidity of the blood and acts upon the nervous centers causing fatal convulsions. That of the colubrine snakes (*Ophidia colubriiformes*), of which the cobra is the type, does not affect the coagulability of the blood, but seems to produce death by its affect on the respiratory centers; there is great dyspnoea, gradually increasing coma, and paralysis and death may occur in two hours. The lungs are always found engaged, and also the spleen and liver.

The blood of any animal dying of snake-bite, or its secretions, are poisonous, and introduced into the system may prove fatal. Sir Joseph

Fayrer cites a case of a woman who, after being fatally bitten by a cobra, suckled her child seven months old. The mother died in four hours after being bitten, and the child two hours later, exhibiting all the effects of snake poisoning.

There is no antidote for the bite of these deadly snakes, unless attention can be received within a brief space of time. A stick tourniquet should then be applied 2 or 3 inches above the wound, with several others at intervals of 4 to 6 inches, the skin removed for a distance of an inch around it, and, if found strongly congested—the sign of a poisonous wound, according to Dr. J. Wall—a deep dissection should be made and the tissues removed, afterwards washing with a strong solution of permanganate of potash and then applying nitric or carbolic acid—or a hot coal, if these are not at hand—at the same time administering the strongest stimulants. Suction, according to the best authorities, is useless. The intravenous injection of ammonia, so much vaunted by Dr. Halford, of Melbourne, Australia, and the use of permanganate of potash, by Dr. de Lacerde, of Brazil, so successful in the hands of these gentlemen, have proved useless in the practice of Indian surgeons, for, although the ammonia is valuable as a stimulant and the permanganate will render the venom innocuous by coagulating its albumen and thus retarding its absorption, if the application instantly follows the bite, according to the experiments of Mr. Wynter Blyth, they are in no sense antidotes. The experiments of Sir Joseph Fayrer and others do not sustain the claim of Mr. Blyth for permanganate of potash, though it is conceded that, out of the body, it will destroy the power of snake virus, as will also preparations of chlorine, sulphur, &c. Professor Binz, of Bonn, recently reports that chloride of lime has in his hands proved a perfect antidote in experiments on animals. Iodine and bromine, ipecacuraha, the guaco plant, senega, and the aristolochia (a classical remedy for this accident), and a thousand other substances have been proposed, vaunted as cures and faithfully tried, but an antidote for the poison of snake-bite is yet to be discovered.

The deaths annually in British India from snake-bite are estimated at 20,000, and in the Bengal Presidency alone the number averages 7,000. This is due to many causes, but principally to a sort of protection extended to the ophidia through religious prejudice, which permits them to remain as inmates of the native huts and deters any one from killing them when the opportunity offers. The habit of going barefooted, through which the seat of the wound is wholly in the neighborhood of superficial veins, the giving up and making no effort to save life, and the trusting to charms, all contribute to the almost invariably fatal result amongst the native races.

Rewards have been offered for the killing of snakes, but it is said to have resulted in the propagation of them by the natives, the eggs being sought for and carefully hatched.

It has been suggested that the rearing of the mongoose, the natural enemy of the snake, should be encouraged, and that baited pit-falls might be set for the snake, as it is for the capture of various wild animals.

CEYLON.

The island of Ceylon is situated off the southern extremity of India, from which it is separated by the Gulf of Maanar and Palk Strait. It extends between $5^{\circ} 55'$ and $9^{\circ} 51'$ of north latitude and $79^{\circ} 52'$ and $81^{\circ} 55'$ of east longitude, embracing an area of 24,702 square miles or 16,000,000 acres, one-sixth of which is composed of hills and mountains

The mountain district is confined to the central and southern portions of the island, while the northern portion is a low sandy peninsula of swamps and jungle, with numerous islets off the coast, while the rest of the island is a series of undulating plains or moderate elevations. In the central zone are one hundred and fifty mountains or lofty hills, rising to a height of from three to seven thousand feet, and ten peaks reaching a loftier elevation, of which the most prominent mountains are Pidairntalagala, (8,296 feet), and Adam's Peak (7,353 feet), the latter being the most conspicuous. In the hill region are very fertile plains, the principal one being that of Newera Ellia, at an elevation of 6,270 feet, the sanitarium of Ceylon, where the climate and surroundings of the temperate zone can be attained within the tropics by the performance of only a day's journey.

The mountain formation are of gneiss, granite, basalt, and other primitive rocks, which show evidences of repeated upheavals, resulting in bold and picturesque formations, precipices, detached pinnacles of rock, and numerous boulders scattered over the valleys. The island has been slowly rising for a long geological period. Evidence of this is furnished by finding in the southern districts deposits of marine shells above high-water mark, and 10 miles from the shore, while on digging beneath the surface soil, decomposed coral and shells of various bivalves are found. In the north, also, there is an extensive region of raised coral beds covered with sand drift, deposited by the coast currents, where breccia is quarried and used for building purposes.

The mountains are not highly metalliferous, and though iron, lead, nickel and cobalt, tin, and cinnabar exist; iron is the only metal which is obtained in any considerable quantity. Rock salt is mined to some extent. But if metals are deficient, gems abound, for which Ceylon has been famous in every period of her history. These comprise the ruby, amethyst, sapphire, cat's-eye, the cinnamon-stone and moon-stone, the garnet, aqua marine and tourmaline. Diamonds, agates, opals, turquoises, and cornelians, have never been discovered. These gems are found in the alluvial plains where the soil is formed of the detritus of rock and in the beds of rivers, the plain around Ballangodda being the most famous. The finer stones are not sought for in recent gravel, but in old river courses, 20 feet beneath the surface, where they are found in a stratum of water-worn pebbles embedded in clay and covered with several inches of condensed calcite. In the existing river beds they are, however, also discovered where the sand is often composed so largely of crushed rubies, sapphires, and garnets as to serve the lapidary for polishing purposes.

The soil consists of disintegrated rock and alluvial deposits, much of it being sandy, and in some cases it is composed of almost pure white quartz, while on the coast coral and marine deposits are added. On the west coast there is much calcite, the disintegration of which, with the admixture of coral and its ferruginous ingredients, forms the red soil so characteristic of some districts.

The island of Ceylon is well watered by numerous streams, the principal river being the Mahawelliganga, which rises south of Adam's Peak, and draining an area of 4,000 square miles, flows into the harbor of Trincomalee. These rivers belong to the plains of the northern and southern portions of the island, and are so full of shoals and rocks that they are only partially navigable for flat-bottomed boats. During the rainy monsoon they overflow their banks, inundating a large area of country; and after the waters have receded the region becomes so

pestilential that the inhabitants are often compelled to desert their homes, leaving the district completely depopulated.

Away from the rivers artificial lakes are formed by constructing dams across the outlets of natural basins, which afford an abundant supply of water for all purposes, including irrigation. This method, associated with the former extensive cultivation of rice, dates back into the remotest periods of history.

The fauna of Ceylon embraces the leopard, the elephant, bear, jackal, ant-eater, wild boar, elk, apes, and monkeys, and several species of deer, including the beautiful spotted axis. The elephant is noted for its vicious character in its wild state, its extraordinary sagacity, and for being, in the majority of instances, tuskless. Crocodiles abound in the rivers, and many venomous snakes, scorpions, and lizards upon the land. Of the poisonous snakes, the tic-polonga and cobra are most to be dreaded. Several of the Boidæ also abound, especially the python (*Python molurus*), which often attains a length of 30 feet.

One of the great pests of Ceylon is the diminutive thread-like leech (*Hirudo ceylonica*), which swarms in the region between the higher mountains and the coast. No protection will keep it from reaching the skin, and its blood-sucking powers are quite equal to the larger species. Being so common a pest, as ever present as the mosquito, it is the custom on going into the jungle, or along water-courses, to carry a lemon, the juice of which will at once induce the leech to lessen its hold.

The diminutive Burmese horse and the zebu (*Bos indicus*) are used for draft purposes, the latter being trained to trot and run with great rapidity.

Every variety of bird generally distributed through the tropics is to be found in Ceylon, the parrots and pigeons being especially gorgeous in the colors of their plumage.

The sea teems with fish, including many varieties agreeable to European palates, of which the sole and whiting and the sair fish (*Cybius guttatum*) are the most esteemed. The shores are fringed with coral reefs, abounding in all that myriad marine life which is always found associated with them, and the pearl oyster is found on the northwestern coast, where it once formed a great source of revenue. Overworking of the beds, however, has nearly destroyed this industry.

The flora of Ceylon is remarkably extensive, as the island embraces the climatic features of so many zones, from its tropical coasts up to the plains of 6,000 feet, where the climate of England prevails. This adaptability has been taken advantage of for the acclimatization of various valuable foreign plants, and the botonical gardens of Peradeniya, at Kandy, have been made the experimental nursery for their raising and distribution. Thus coffee, cinchona, tea, and caoutchouc have been introduced and converted into staple productions.

Rice, though not produced in sufficient quantities to supply the inhabitants, is largely cultivated, 650,000 acres being devoted to this grain alone. The system of cultivation is the same as it is elsewhere throughout the East, being principally hill-side cultivation with overflowed terraces. Over 100,000 acres are cultivated with maize.

The most important of the growths of Ceylon are its palms, which seem to supply every human want. These are the cocoanut palm (*Cocos nucifera*), the palmyra (*Borassus flabelliformis*), the areca (*Areca catechu*), the talipot (*Corypha umbraculifera*), the jaggery (*Caryota urens*), with some minor varieties.

The cocoanut palm, besides supplying food, drink, domestic utensils, building material, thatch and fencing, torches, firewood, mats, baskets,

wine, spirits, and sugar, furnishes millions of nuts, and dried meat (*copra*) for export, the latter being a special trade with India. It is estimated that there are 26,000,000 of cocoanut palms under cultivation in the island, and 8,000,000 of the palmyra, which furnishes hard and durable timber for building purposes.

The areca palm produces the nut which is chewed with the betel pepper-leaf and lime, and the talipot supplies material for the building of tents, the leaf is used as an umbrella, and in the preparation of a substitute for papyrus, while the heart furnishes a starch similar to that of the sago palm.

The kitul or jaggery palm is the source of jaggery sugar and toddy wine; its heart is rich in sago; its leaves furnish fibers for fish-lines and bow-strings, and the fiber of the leaf stalk is of such strength and tenacity that ropes manufactured from it are used to tie the wild elephants. Its timber is also very hard and durable.

Cinnamon is largely produced, and is not equaled in quality elsewhere. Tobacco is raised to some extent; also cotton and sugar-cane, though the latter is only sold as a vegetable, its sap not being crystallizable.

The banana (*Musa sapientum*), the bread fruit (*Artocarpus incisa*), the jack-fruit (*Artocarpus integrifolia*), the mango, orange, and pine-apple, as well as many varieties of the calla and manioc are extensively cultivated as articles of domestic food, and the black pepper is grown throughout the island.

Coffee was once the great staple, and the island promised to become a vast coffee plantation; but after a considerable period of prosperity the leaf disease attacked every estate, and has reduced the production down to a point where it has ceased to have much commercial importance. This disease is due to a fungus, the *Hemileia vastatrix*, which has thus far baffled all attempts at eradication.

Tea culture has taken the place of the coffee industry, and in a region of alternate sunshine and rain, in the central hilly regions, a most perfect climate has been found for the cultivation of this plant, which flourishes from an elevation of 600 feet above the level of the sea up to a height of 6,000 feet.

The cultivation of the cacao tree (the *Theobroma cacao*) is also a growing industry, which already comprises plantations covering 20,000 acres.

Caoutchouc is another of the important plants acclimatized in the botanical gardens, and millions of young trees have been planted in appropriate localities, where they are flourishing in a most satisfactory manner.

Cinchona has already been treated of in connection with the culture of this plant in India. In 1872 500 acres were under cultivation; in 1877, 6,000 acres of the hill country were devoted to it, and in 1883, 40,000 acres, with an export of 6,000,000 pounds of bark.

The cultivation of cardamoms, nutmegs, and pepper, and the African palm, have received much attention of late years, and the most recent experiment is the introduction of the Liberian coffee plant, which grows at a low elevation, and will, it is hoped, resist the fungoid disease.

The essential oils from citronella, or lemon grass, cinnamon, and cloves, are largely produced for export, and cocoanut oil is a large article of commerce.

Besides these growths of domestic and commercial value Ceylon is particularly rich in every magnificent form of vegetation, the most noticeable being the bamboo, banyan, ironwood, rattan, acacia, flamboya, the silk cotton tree, the hibiscus, cactus, and the mangroves, while all

the forest growth is closely bound together with flowering lianas and other vines. In the elevations of the interior various forms of laurel, myrtle, the beautiful aborescent rhododendrons, and wild nutmeg are the most common forest trees, while both orchids and tree ferns and the climbing bamboo grow in profusion.

The climate of Ceylon is controlled by the monsoons. The southwest monsoon sets in during the month of May, accompanied by the most terrific thunder-storms and a deluge of rain. The wind soon becomes steady from the southwest, rains occur occasionally, and the heat gradually diminishes through June, July, and August. Then the winds become variable, until another but lesser atmospheric disturbance in November ushers in the northeast monsoon, which brings light rains. In January it blows strongly, and coming over the arid regions of Asia is dry and parching. In March the heat is intense, there is little wind, all vegetation is dry and brown, the water-courses are low, and in some districts there is drought. April is even more oppressive, and there succeeds in May again the break of the southwest monsoon. Hurricanes and typhoons seldom accompany either monsoon.

The rainfall varies, according to elevation, from 80 to 200 inches. The highest temperature of the northeast monsoon on the coast is 87° , and the annual average about 80° , which also expresses something near the uniform temperature throughout the year, which has a small range of variation. At an elevation of 3,000 feet the annual range is between 56° and 80° , while at Newera Ellia (16,410 feet) the thermometer falls to the freezing point in mid-winter. The latter spot is the chosen sanatorium of the Englishman. It is a valley surrounded by lofty hills, and during the dry months of winter is an agreeable change from the hot and stifling air of the coast; but the rest of the year it is too damp to be anything but injurious to the majority of individuals. Even in winter it is a trying climate, from the daily range of temperature being so great, the thermometer, which indicates 32° at night, rising to 78° at noon. Its principal merit seems to be that it forcibly reminds the colonists of Old England, and has been made fashionable.

The last census gives the population of Ceylon at 2,800,000, which embraces, Europeans, Cinghalese, Veddahs (aborigines), Hindus, Tamils, from the Malabar coast, Moor-men, of Arabian origin, Malays, Chinese, Kaffirs, Negroes, Portuguese and Dutch half-castes, and other Eurasians, or mixed races.

The following is an approximate division :

Cinghalese (chiefly Buddhists)	1,500,000
Tamils (chiefly Brahmins)	820,000
Moor-men (Mohammedans)	150,000
Mixed races	10,000
Malays, Chinese, Javanese, Kaffirs, and Negroes	8,000
Portuguese, and Dutch half-castes	6,000
Europeans (chiefly English)	4,000
Veddahs	2,000
	<hr/>
	3 500,000

The Cinghalese are an effeminate, delicately-formed race, with small hands and feet, a skin varying from a cinnamon color to a much darker shade, black hair, and dark hazel eyes. Their effeminacy is heightened by their costume, which consists of a large piece of colored cloth, the *comboy*, worn something like an apron and confined at the waist by a girdle, while their hair is twisted into a knot and decorated with a large tortoise-shell comb. They are traders principally, and deal in the fruits of the country, fish, carved ebony, and basket-work, though a few occupy prominent mercantile positions, and many have accumu-

lated wealth. The Cinghalese of the hills are a hardier and more robust race, with broad chests and generally fine physique. They are an off-shoot of the Aryan race.

The Tamils are from the Malabar coast of India; a tall, muscular, and dark race. They made their advent in Ceylon as conquerors, but now constitute the laboring class, recruited yearly by immigration. They speak a distinct dialect, and belong to the Dravidian or aboriginal race of India. Their dress is usually only a breech-clout.

The Moor-men are the descendants of the Indo-Arabs, who settled in Ceylon two thousand years ago, and until the advent of the Portuguese controlled the commerce of the island. They are still the moneyed men of the country and largely engaged in trade, the dealing in precious stones being almost entirely in their hands. They are tall, have a brownish yellow complexion, with black hair, and long flowing beard. Their costume consists of loose white trousers, a white jacket, and a burnos, with a white or yellow turban.

The food of the people consists of rice, the products of the palm, the various fruits, especially bananas, esculent roots, and all the forms of marine life. The national diet is curry, for which Ceylon is famous, into which every variety of flesh enters, even the flying fox, the snake, iguana, and monkey, and every form of vegetable.

The Royal Botanical Gardens of Peridinea, of which mention has been so frequently made, are located at Kandy, the ancient capital of Ceylon, at an elevation of 1,500 feet above the level of the sea. They were originally laid out in 1819, under the superintendence of Gardner. Subsequently they were placed in charge of Dr. Thwaites, and within a short period have been transferred to the care of Dr. Henry Trimen, an accomplished botanist and author of an admirable work on medical botany.

The gardens occupy a peninsula formed by a bend in the Mahawelli River, and embrace about 150 acres of rich soil, inclosed within a hedge of bamboo and rattan. The moderate elevation gives them a semi-tropical climate, and their mountainous position abundant rain, so that the location is admirably adapted for its purposes. There are several branch gardens in more elevated portions, where plants requiring a greater altitude can be grown and studied.

Peridinea is a beautiful park, with plants arranged in groups for convenient study, and a nursery for propagation and experiment. The most striking feature of the garden is the avenue of Indian caoutchouc trees (*Ficus elastica*), the noble growth of palms, the banyans, the cinchona trees, the fernery, and the display of orchids; but every typical plant of the tropics can be found here and particularly studied, botanical study being further aided by a complete herbarium and an admirable library.

Already Ceylon is indebted to these gardens for tea and cinchona, which now constitute its commerce and wealth, and in a few years the millions of caoutchouc trees, which have been so liberally distributed, will become another source of revenue. The native rubber tree is of little value, but experiment has proven that those of tropical America thrive perfectly here, and the three following species are being carefully cultivated in suitable locations throughout the island: (1) Ceara rubber-tree (*Mainhot galaziovii*); (2) Para rubber tree (*Hevea brasiliensis*); (3) Central American rubber tree (*Castillea elastica*).

The most recent experiments in aid of the agricultural interests of the island are as follows:

The cupra quina, which produces the cuprea bark allied to cinchona; Liberian coffee; new varieties of cacao, especially the caraccas or

“coriollo;” the climbing caoutchouc; the gutta-percha. And of medicinal plants: jalap, taraxacum, lignum vitæ, cassia lignea (Chinese), star-anise, Borneo camphor, and the Mysore cardamom; and of fiber plants, Peruvian cotton, China grass (ramie), Manilla hemp, New Zealand flax, and several varieties of the aloe.

The educational and charitable expenditures of Ceylon are very considerable, and embraced in 1882, £48,000 for schools, £60,000 for medical purposes, and £10,000 for more direct charity.

The public schools now number 2,200, and the scholars in attendance in 1882, 105,000. The civil hospitals and dispensaries number 111, in which 150,000 patients are treated annually.

The Government medical service is similar to that of India, under the direction of a “principal civil medical officer,” and “inspector-general of hospitals,” the present incumbent being W. R. Kynsey, esq., M. K. Q. C. P. I., L. R. L. S. I., a gentleman of marked ability and learning. This service has charge of all civil hospitals, dispensaries, leper and lunatic asylums, and the medical college at Colombo. It also supervises prostitution in association with lock hospitals, and enforces vaccination, the quarantine, and general sanitation.

The principal diseases of Ceylon seem to be intermittent and remittent fevers, cholera, dysentery, and diarrhœa, pneumonia, bronchitis, rheumatism, leprosy, beri-beri, parangi, and the syphilitic affections.

Cholera is frequently epidemic in the rice districts, and often carries off an entire village. It is said to be imported generally by the Tamil laborers from India.

The Parangi disease.

The parangi disease, or “Spanish pox,” has recently received careful study, and been systematically investigated by the civil medical officers, the result of their labors being embodied in an admirable report prepared by the principal civil medical officer, Dr. Kynsey.

It is a disease found in every district of Ceylon, but more especially in the southern districts, where, in 1879, 6,758 cases existed, and throughout the island 10,305. In the vicinity of Colombo it is not often encountered.

Parangi seems to have been known from ancient times, but after the introduction of syphilis and other foreign affections characterized by eruption, its diagnosis became confused. It bears a striking resemblance to yaws, is not unlike pellagra, and is easily confounded with the syphilitic eruptions, yet it seems to have distinctive diagnostic signs.

The etiology of the disease is by no means established, but official inquiry points to insufficient and innutritious food, the absence of meat, and the substitution for rice of a poor grain known as kurrakan, filthy habits and surroundings, and the drinking of impure water from nearly exhausted tanks—artificial lakes—where cattle wallow through the day. Microscopic examination has thus far discovered no bacillus or determined any peculiar condition of the blood or secretions.

The disease is undoubtedly contagious, and the weight of evidence seems to prove that it is not hereditary or transmitted through natural secretions. All are subject to the disease, but absolute contact of discharges is required—not necessarily an abraded surface—for its propagation. It is only however in the debilitated that its worst forms are manifested, and only in those cases does it seem to affect longevity, or even the general health. Once cured a recurrence of the disease is doubtful.

Parangi is divided by Dr. Kynsey into three varieties and four stages. The symptoms are thus described by Mr. Garwin, M. B.:

Primarily there is a stage varying from two weeks to three months, during which period an ulcer forms over some bony prominence, generally caused by scratching the part. While this ulcer is healing the second stage declares itself as a slight pyrexia, accompanied by a feeling of debility and general malaise, with articular pains of a dull shooting character, lasting from two to eight days and terminating in the third stage, that of eruption. The eruption occurs in successive crops, first on the face, then on the trunk and extremities, and not infrequently on the fauces, soft palate, and tongue. It is quite characteristic, though sometimes it becomes confluent in the axilla, nates, and groin, when its distinct features are lost.

A papule similar to that of acne first appears, and undergoes various changes which serve to diagnose its varieties. In the first and mildest variety of the disease, the papule assumes a yellow tinge, loses its prominence, and heals in one direction while extending in the other. In this there is no loss of substance, no discharge, and only a slight desquamation in healing.

In the second and third varieties the papule increases to the size of a pea, or larger, becomes very prominent, and its apex roughened from degeneration of epithelium. A gluey matter exudes, forming a crust. The papule shrinks and acquires a brownish yellow hue, a crack or fissure surrounding its base. It resembles rupia, but the crust is less conical, cockle-shaped and stratified. The third variety is a sequel of this, in those patients who are greatly debilitated, or where the parts have been submitted to friction. Then the exudation is excessive, the papule becomes greatly enlarged, pus forms abundantly, and oozes out from beneath the dirty yellow soft crust, which is constantly being removed as quickly as it is formed, presenting a condition not unlike that of condylomata.

When about to heal the rupial crusts fall off, leaving a clean, granulating surface, appearing like a ripe raspberry, or the crusts may dry up and fall off, exposing a surface already healed. In the condylomatous form, healing takes place as in ordinary ulcerations, and in all cases the resulting cicatrix is invariably deeply pigmented, the natural hue of the skin not being acquired for many months.

In rare cases parangi goes on to a fourth stage, which has been attributed to the abuse of mercury. This is characterized by great debility and emaciation, anorexia, extension of the eruption, unhealthy ulceration, with profuse discharge, destruction of the true skin, and excessive deformity, if the patient recovers, through the contraction of cicatrices.

When the eruption occurs on the soles of the feet, it is termed *dumas*. In those cases, the hard cuticle is distended until it bursts—the pain being excessive—and the eruption appears as a fungous growth, covered with a yellow scab.

Early writers on parangi have considered the disease to be a form of syphilis, but this has been completely disproved by the careful consideration lately given to the subject, and the same investigation has proven that it is not a form of leprosy, pellagra, or yaws, but a disease *sui generis*.

From syphilis it is distinguished by the absence of the ordinary signs of that affection when it is a disease of inheritance; and where the osseous system is affected in parangi it is always due to the abuse of mer-

cury and does not properly belong to the history of the disease. The character of the eruption sufficiently distinguishes it from lupus; from leprosy it is easily diagnosticated by the absence of the enlarged ear lobes and the characteristic anæsthesia.

To frambœsia and yaws it bears a striking resemblance, and in the condition known as *dumas* the same raspberry-like growth is produced. Many still think it to be frambœsia modified by climatic influences.

The prognosis is always favorable, save in cases which are in the fourth stage. Convalescence is readily established in the first variety, while in the more chronic cases there is little suffering, trifling disturbance of the general health, and ultimate recovery.

The treatment is dietetic and medicinal. Under the first head, good nitrogenous food, milk, cod-liver oil, and ferruginous preparations should be ordered in all cases indicating malnutrition. Under the second head the treatment varies with the stage of the disease. In the febrile stage warm baths, diuretics and diaphoretics, saline cathartics, as sulphur and potass. bitart., are ordered. In the eruptive stage mercury is of use, but must be carefully administered, preferably in combination with potass. iodid. Much harm has been done by this drug in the hands of the native *vedaralas*. For the flying pains the iodide and bromide of potassium in combination are recommended. In this stage arsenic is of use, and the potass. bitart. and sulphur should be continued. Locally ointment of acid carbohc is applied, and the fungous growth of *dumas* is destroyed with nitric acid. The warm bath, with soap, should be used daily.

The more extensive and intractable ulcerations, lesions of the bones, and abscesses, due to the abuse of mercury in the hands of the native quacks, are best treated by potass. iodid. Locally, stimulating applications are found useful, such as strong tincture of iodine, carbohc acid lotions, turpentine liniment, &c. If the cicatrix is dense it may be separated by an incision, or even excised. Other conditions are treated on general principles.

Hospitals have been established throughout the districts where parangi prevails, and every attention is given to the afflicted. The disease, however, must exist so long as there is poverty, defective agriculture, water tanks of insufficient capacity, and general hygienic surroundings of the worst character.

As regards inoculation, which is employed to acquire yaws in the West Indies, no reports have as yet been made by the medical officers of Ceylon, though instructed to employ it. In the reports for the year 1871, however, Mr. W. D. Wright makes the following allusion to a custom prevalent in remote parts of the Vavuni district. This custom is—

To make children, when they are about one year old, partake of rice off a leaf or plate on which a person suffering from the disease has eaten. In a short time pustules appear, resembling itch, on the child's body, and then medicines containing a minute portion of mercury are administered, which cause the pustules to dry up in seven days, the scales to fall off, leaving deep marks, which, in course of time, disappear. It is said that this is an almost certain prophylactic, and that though the disease may attack one who has been so guarded, the effects are never serious.

The ports of Ceylon visited by the *Juniata*, were those of Columbo and Trincomalee during the month of June, 1883, and from the former an opportunity was given to go into the interior to Kandy, the ancient capital and site of the Royal Botanic Gardens of Peridinega, a distance of 74 miles.

COLOMBO.

Colombo is the chief city of Ceylon, and is situated in latitude $6^{\circ} 55'$ north, longitude $79^{\circ} 45'$ east, upon the western coast of the island, occupying the shores of what was once a dangerous roadstead. By the building of a breakwater, however, at an expense of \$6,000,000, this roadstead has been converted into a safe and commodious harbor, and the city has become a most important station on the lines of travel between Europe, Asia, and Australia.

Colombo occupies a rocky headland, once strongly fortified by the Dutch, and these fortifications, with their moats and drawbridge, and the ancient and quaintly constructed buildings in their vicinity, form the nucleus of the widely extended modern city, a quarter still known as "The Fort." The streets here are not broad or long, but there is much beauty in them, as they are all shaded with closely planted trees, most of these the graceful flowering hibiscus. Here is located the "Queen's House," the noble palace of the governor, imbedded in a forest of tropical vegetation, and having before its entrance a recently erected modern clock tower.

To the south of "The Fort" are extensive military barracks, the military hospital, and the galle-face (race-course). The latter is a broad esplanade along the shore, a strip of land separating the ocean from a chain of fresh-water lakes, a park and lawn carried down to the edge of the breakers. It is laid out with a race-course and recreation grounds, is the site of the club, and is the spot where the band plays nightly, where the whole community comes to walk and play, and listen to the music—the breathing place of Colombo.

The galle-face is traversed by a road leading to the extensive suburb of Kolpetty, and through this to the cinnamon gardens, upon Slave Island. This district was once a famous government plantation, but is now a fashionable suburb, the site of many beautiful residences and the Colombo Museum.

The scenery upon the fresh-water lakes is very charming, its many bays being bordered with pretty villas and native huts, surrounded with tall palms, and its surface spread with the broad leaves and pink and white blossoms of the lotus.

To the north is the native town of Peltah, a crowded and compactly built district, and still further to the north the suburb Mutwal, which extends to the point where the Kalavi River debouches into the sea. The bridge of boats which crosses this river is the northern limit of Colombo.

The private dwellings are mostly in the bungalow style, with red-tiled roofs, and the native houses are mud huts with roofs of palm thatch, and doorways closed with matting.

The population of Colombo is put at 120,000, comprising the various races mentioned in the general description of Ceylon.

The water supply is obtained from wells, the lakes, and the river, but works are now being constructed, at a great cost, which will bring an abundant supply from mountain streams, 30 miles distant.

Being a flat region, the drainage of the city is poor, and the same rules are enforced in regard to removal of garbage, offal, and excrementitious matter as in India, with a thorough sanitary supervision of all premises. The streets of the city and the various roads of the suburbs, which are all carefully macadamized with laterite, are kept scrupulously clean.

The Ceylon Medical College was founded in 1870, and liberally endowed by two wealthy Cingalese, Messrs. De Soyza and Rajepukle. Its faculty consists of a president and seven lecturers, and its curriculum is five years. It is annually sending out well-trained young men throughout the island and to the "Straits Settlements," as well as many of superior talent to continue their studies in Europe and America. Women are admitted to this course of study.

Directly connected with the college is a lying-in hospital, under the immediate charge of an English midwife, and it would be difficult to find a more perfectly appointed establishment in any part of the world.

Closely adjacent is the general hospital built upon the pavilion plan, all the wards being of one story, with connecting corridors, and opening by broad doorways upon shaded verandahs. The dry-earth system is used in the latrines.

During the year 1882, 3,252 patients were treated in this institution; the daily average of sick being 146. The death rate was 12.51 per cent. and the total number of deaths 406. The principal causes of death were—

Diarrhœa (452 cases).....	206
General debility	35
Phthisis pulmonalis	26
General dropsy.....	18
Anæmia	17
Dysentery	17

The average cost per diem for each patient is about 25 cents.

Besides the general hospital there is also a lunatic asylum, an infectious diseases hospital, and a police, convict, and leper hospital within the precincts of Colombo, as well as a "Lock ward," associated with the first-named institution.

TRINCOMALEE.

Trincomalee Bay (latitude $8^{\circ} 32' 10''$ north, and longitude $81^{\circ} 18' 30''$ east), situated on the east coast of Ceylon, affords probably the most capacious and secure harbors to be found in the eastern seas, and is unsurpassed in its tropical beauty.

The entrance at first is $5\frac{1}{2}$ miles in breadth, but gradually narrows, and then expands again. The southern portion is termed Great Bay, which connects by a narrow passage with a large lake, and the northern portion is Trincomalee Harbor, each receiving a branch of the great river, the Mahavillygunga, which has its rise in the mountains of the central district.

Trincomalee Harbor, entered by passing between Ostenburg and Clapenburg Points, is virtually land-locked, forming a great lake, dotted with islands and rocks, and surrounded by mountains, which, near its entrance, are broken into lofty precipices covered with a luxuriant forest growth, principally composed of the various palmæ.

The water is very deep, and its depth extends closely to the shores, where, in many localities, the largest vessels can lie so near that their yards overhang the land.

The town is defended by two forts, one on the heights of Ostenburg Point, at the entrance to the harbor, and the other Fort Frederick, both being old Dutch structures. Fort Frederick is placed on a rocky bluff commanding the broad entrance to the bay and the plain on which the town is located.

The town of Trincomalee is built upon a plain occupying the summit of a long peninsula, and though it presents an attractive appear-

ance from the water, with its white bungalows and red-tiled roofs, it is a poorly-constructed, widely-scattered town, with no beauty save in its few official buildings, and possesses the most inferior bazaar of all Ceylon.

Trincomalee derives its importance from being the naval headquarters of the English fleet. A navy-yard is located here, and the admiral, when present, occupies a sumptuous bungalow on shore. During the stay of the *Juniata* Rear-Admiral Sir William Hewitt was present with several vessels of his fleet, and was profuse in his hospitality.

With all the advantages of an admirable harbor, and a back country equal to that in the vicinity of Colombo, with rivers affording facilities for irrigation, Trincomalee has no commercial importance. Most everything sold in her bazaars is imported, and her only exports are a small quantity of tobacco, some cocoanut oil, the *bêche-de-mer* (*Holothuria*), or sea-slug, sharks' fins, and shells, which are found here in great variety, including the many forms of *Cypræa* (cowrie), *Ovulum*, and *Volutidæ*.

The small civil hospital demands no special mention, or the local diseases of this district.

RANGOON.

Rangoon, in British Burmah, is situated on the Irrawaddy River, at its junction with the Pegu, in latitude $16^{\circ} 46'$ north, and longitude $96^{\circ} 8'$ east. The city extends for a mile along the left bank of the river, and presents a most attractive appearance from its spacious harbor. There is a broad, well-paved bund, ornamented with trees, where are located many fine public buildings, the municipal market, and large structures devoted to commercial purposes. The streets are narrow, but well paved and clean. There are many fine squares, a fine park, pretty suburbs, where foreigners dwell in sumptuous villas, and crowning the whole is a hill, rising nearly 200 feet above the river plain, on the summit of which is the most wonderful of Buddhist temples, the great feature of which is its gilded tower, 377 feet in height.

The city is well built, principally of wood, and as a consequence, extensive conflagrations are frequent. The buildings are mostly unpainted, and have a dull, monotonous brown hue. On account of the location, in the alluvial plain bordering the river, and the excessive humidity of the climate during its remarkable rainy season, the lower story of each house is left as an open space, devoted to storage or stable accommodations, while in the upper story are the living apartments, opening by large doors and windows into capacious balconies.

The population of Rangoon is not far from 100,000, embracing a large number of Chinese. Both the native Burmese and Chinese are exceptionally industrious. They are admirable workers in wood, produce some excellent lacquer, and cultivate the soil extensively, exporting to India and Ceylon immense quantities of rice. Another great article of export is teak wood, and on the right bank of the Irrawaddy are extensive mills and yards devoted to the preparation of this valuable timber for export, where elephants perform the service of transporting the lumber and stacking it up in lofty piles.

The same sanitary regulations are in force here as in the cities of India. There is no system of sewerage, all drains being superficial and exposed, but all premises are regularly policed, and excrementitious matter with garbage carried away daily.

The water supply is at present obtained from wells, but works are now being constructed, and will soon be completed, which will furnish an abundance of pure water from neighboring mountain lakes.

Burmah has three seasons, the cold, hot, and wet. The cold season includes the winter months only, when the temperature never falls below 50° at Rangoon. The hot season embraces the spring months, and with July is inaugurated the wet or rainy season, a period of catclysms extending to the end of November. The annual rain-fall at Rangoon is about 200 inches, and a fall of 11 inches has been recorded in thirteen hours. Nearer the mountains the fall is often double that which is recorded in the city, or along the banks of the Irrawaddy.

The general hospital comprises several wooden structures set in ample grounds, and is under the control of the same Government medical service as is found in India. The buildings are of a light, temporary character, devoid of paint, and consequently weather-stained; but the wards are large, ventilated by permanent openings in lieu of windows, which are closed by mats in inclement weather, and all open upon spacious shaded verandahs. The furniture is of the simplest character, the climate rarely requiring more than a mat for native use. The hospital has accommodations for 180 patients, and includes a lying-in department.

In consequence of the common habit among the Burmese of carrying knives, cases of wounds inflicted by these weapons are admitted almost daily, most frequently penetrating wounds of the abdomen. Peritonitis is, however, rare, and uncomplicated with intestinal laceration. These cases are rarely fatal.

Dysentery is especially common, the result of drinking foul river water, and what is known as the "Burmese ring-worm," or "Malabar Itch," is a most frequent affection, often covering the entire body in defiance of all treatments. What has been said of cholera, and the varied forms of malarial disease in India, is equally applicable to British Burmah. Leprosy is also common, and lepers, no matter what their rank or wealth, are required to live apart in special villages, or in hospitals under European control. On feast days, however, they are permitted to go abroad, and throng the steps of the temple soliciting alms.

The native physicians of Burmah are legion, as it requires only a simple announcement that one possesses certain valuable remedies to be accepted as an exponent of the healing art. They are divided into two classes: the dietists, who cure by judiciously regulating the diet, and the druggists, who believe in and administer medicine.

The Burmese school of medicine, if it may be so dignified, accepts man as composed of the four elements—earth, water, fire, and air—and diseases as a disturbance of the harmony of these elements. Earth constitutes the body of a man, including the organs; water, the secretions; fire, the functions; and air, the "six winds."

The drugs in use comprise a few minerals and a multitude of vegetable productions, which are put up in pills, and carried in long cylindrical bamboo boxes painted of a brilliant red.

Among the native practitioners of medicine many sensible fellows are to be found who possess remedies of value; but most of their drugs are drastic cathartics, or bitter, disagreeable medicines, administered without any intelligent idea of their application to the diseased condition. Their potency consists in being collected on certain days of good or ill-luck, or under certain astronomical combinations, and the horoscope of the patient has much to do with the remedy selected or the diet prescribed, while the moral condition of the patient is another important element which affects the system; and if medicine fails, it is at once concluded that he is possessed of an evil spirit. In this latter case

he is beaten, dragged around by a rope, has pepper put in his eyes, and certain forms of exorcising are gone through with.

Medicine is, in most cases, supposed to act favorably within a short period, and a half hour is usually the time allotted to a practitioner to relieve his patient. If not successful in giving prompt relief another physician is summoned, and so on until some crisis is reached, which may be the determination that the patient is possessed of an evil spirit, and the witch doctor takes the case.

Meteoric iron is a favorite remedy, being especially esteemed when discovered within a short time after its fall, and is principally used in diseases of the eye. The native treatment for cholera is a decoction of the rind of the mangosteen (*Garcinia mangostana*), a powerful astringent which is certainly of use in the earlier stages of this disease. Shampooing (massage) is very intelligently applied and gives great relief in all rheumatic affections.

It is satisfactory to know that the intelligent Burmese are acquiring the habit of seeking medical advice from the educated physicians so liberally furnished them by the English Government, their services being available in almost every portion of British Burmah.

The Burmese belong to the Indo-Chinese race, assimilating more closely to the Mongolian type. They are short in stature but well developed, have prominent cheek bones, and eyes placed obliquely. The dress of the males is a long tunic with wide sleeves, worn over a skirt reaching to the heels, and with the higher classes is made of rich materials. The female dress is a shorter tunic, and a trailing skirt with a sash or scarf crossed over the chest and supported from the shoulders. The peasantry wear black garments and the laborers only a clout or loose flowing trousers.

Tattooing is universally practiced, and all males are covered with blue figures from the navel to the toes, giving the appearance of a close-fitting pair of drawers.

Rice is the principal food of the Burmese, which is always served with curry, and together they constitute the principal food of the people. Curries are prepared as a sort of stew, and in them are introduced fish, meat, onions, asparagus, Chili peppers, bamboo sprouts, tamarind and mango leaves, and in fact anything succulent or savory which is obtainable, with plenty of oil and salt. With the curry is served an endless number of condiments, principally pickled and salted fish and vegetables. Roasted turtle's and iguana's eggs, and fried ginger are frequent accompaniments, as also a red stinging ant fried in oil, which is much esteemed; while the nga pee, a fermented and salted fish, is always served with curries, either after the manner of the Bombay ducks in India or in the form of a paste.

After meals the mouth is rinsed with water, and smoking or betel chewing succeed. Old and young, male and female, indulge in these habits, smoking green cheroots often 8 and 10 inches in length.

The markets of Rangoon are well supplied with every variety of fruit and vegetable, poultry, game, and meats, all obtainable at the most moderate prices.

No opportunity was given at this port to observe the effects of general liberty upon our enlisted men; but the extension of the contagious diseases act to British Burmah is said to have exerted a favorable influence over the spread of venereal affections, while the reports upon recent liberty from other ships of war has shown a very small percentage of disease. The toddy-shops, however, generally send on board a large number of men in a state of helpless intoxication.

THE STRAITS SETTLEMENTS.

The Straits Settlements, in the Straits of Malacca, comprise the three provinces of Singapore, Malacca, and Wellesley, constituting an independent colony of the British crown.

The two principal ports are Georgetown and Singapore, which were visited by the *Juniata* in the month of August, 1883.

GEORGETOWN.

Georgetown (latitude $5^{\circ} 24'$, longitude $100^{\circ} 21'$ east) is a small city, the capital of Penang Island, by which name the port is more commonly designated. It occupies a low plain on the eastern point of the island, at the extremity of which Fort Cornwallis is located. It is a clean place with a well constructed bund, and one broad avenue running through the center of the town. This avenue is intersected by many smaller streets; a fine driving road follows the course of the beach, and near the bund is a spacious square upon which the public buildings are located. Its harbor is completely landlocked, and always crowded with shipping.

The population is estimated at 50,000, the majority being Malays with a large percentage of Chinese, and many Siamese, Chuliahs, and Klings, Hindoos, and Burmese, with a few Eurasians and Europeans. The Malays are an indolent race, and most of the business is in the hands of the Chinese, who acquire great wealth and live in much style, their city houses and country bungalows being the abodes of luxury. The Chuliahs and Klings are Eurasians from the eastern coast of India. The population of the island is about 75,000, of which number but 612 are Europeans.

The sanitary regulations are the same as those of most Eastern colonial cities, and the drainage is all superficial. The contagious diseases act is enforced, and a Lock hospital is provided for the treatment of prostitutes, who are examined weekly. They are divided into two classes, those who cohabit with Chinamen only, and those who are promiscuous prostitutes, each class occupying different sections of the city. The result of the enforcement of the act has been highly satisfactory in the suppression of venereal disease.

The general hospital is a new structure of two stories, in the style of the better hospitals of India, with large wards, and specially luxurious apartments for the higher class of paying patients. The pauper section consists of detached wards of one story constructed of bamboo. The floors are of tile, and slope from the center towards gutters running along the base of the walks, an admirable arrangement for quickly cleaning and drying them.

Beriberi is very common here amongst the natives, but Europeans are rarely attacked. The deaths in this disease amount to 16 per cent. of cases admitted.

The island of Pulo Penang is mountainous, a range of lofty granite hills running through its center, the highest peak being 2,735 feet. The mountains and foot-hills are thickly wooded, and numerous streams furnish an abundance of pure water for agricultural purposes and the supply of the household.

The soil is wonderfully fertile, and produces the various palm products, bread-fruit, sago, cocoa and areca nuts, rice, sugar, coffee, cloves, nutmegs, mace, black and white pepper, guavas, mangoes, lemons, oranges, and bananas. Opium is also largely produced, and with timber and the products enumerated above constitute an extensive commerce.

SINGAPORE.

Singapore (latitude $1^{\circ}17'$ north, longitude $103^{\circ}18'$ east) also occupies an island lying off the southern point of the Malay peninsula, from which it is separated by a narrow strait, only half a mile in width at some points.

The city of Singapore is located on the river of the same name, and is a bustling, active business center, the commercial metropolis of the settlements. Both banks of the narrow river, and the shore to the harbor to the southward, are walled up so as to form five landing places which are lined with large commercial houses and godowns, and the river is always packed with sampans and cargo boats. Dalhousie pier, a fine structure of stone, is the principal landing place, and the approach to the river is protected by Fort Fullerton and a small battery. To the northward extends the esplanade, a broad park and drive along the shore, on which are located the principal public buildings, churches, and hotels, with some commercial houses and the private residences of many Europeans. The most beautiful of these buildings is St. Andrew's church, a reproduction of Netley Abbey. Beyond this water-front are compact quarters occupied by the Chinese and Malays, and the many hills which rise within and near the city are covered with beautiful villas and official residences, ——— Hill being crowned with a formidable fortress.

The city is well built. The commercial houses are of stone or brick, but private dwellings are constructed of wood, with the second story surrounded by verandas closed in with Persian blinds. The European villas are somewhat in the same style, the second story consisting of the living apartments, the lower story devoted to offices and servants' quarters. This would seem to be an adaptation of the Malay style of dwelling, in which the house is elevated upon stakes to get away from the damp earth, the favorite location of a Malay hut being near or even over a water-course.

The population of Singapore is stated at about 100,000, comprising principally Malays, Chinese, Arabs, Klings, Bengalese, Parsees, Javanese, Eurasians, and Europeans. The Chinese constitute more than one-half of this number, the Klings from India are numerous, while the Europeans, including many Portuguese, amount to only 1,500.

The sanitary regulations are not different from those of Penang. There is no general system of sewerage, but an earnest effort to remove all offal and garbage daily from private quarters and public thoroughfares is manifested, which results in a remarkably clean city.

Here, as at Penang, prostitution is licensed, and under the same restrictions.

The water supply is obtained by taking advantage of certain water-sheds and springs, within a reasonable distance of the city, where a vast area of woodland and jungle is reserved for the collection of the rainfall. From this point it is conducted in pipes, and pumped into reservoirs upon the summit of the hills which rise within the city, whence it is distributed.

The general hospital is a new and recently incorporated establishment, upon an extensive scale, and embraces, within ample ornamental grounds, a large two-story building for the superior class of patients, having many private apartments; separate detached wards for the pauper patients, and a lock hospital.

There were many cases of beri-beri in the hospital, but the disease is not so common as in the island of Pulo Penang. There were also cases of cholera, which is here an endemic disease, prevailing espe-

cially amongst the Mohammedans during the fasting months, when they refrain from all food between sunrise and sunset, after which they gorge themselves, especially with fruit. Small-pox is very prevalent, and leprosy is widespread, special hospitals being provided for both classes of patients.

The Government medical staff have control of all the civil hospitals in the "Settlements," under the general supervision of a chief provincial civil medical officer. They also have charge of public sanitation, the quarantine, and the enforcement of the contagious diseases act, as well as of the lunatic asylum and asylum for lepers.

The medical report for 1882 shows that during that year 616 Europeans and 15,939 natives were treated in all the hospitals of the settlements, of which number 28 Europeans and 1,670 natives died.

The list of diseases includes those found under treatment in all large hospitals throughout the world, a few having special prominence, and others being peculiar to the country. Intermittent fever numbers 1,126 and remittent fever, 162; sloughing phagedena, 500—deaths not stated in these cases; 152 cases of cholera were admitted, of which 94 proved fatal. Of 148 cases of variola, 36 died; 632 cases of beriberi were treated, with 130 deaths. Cutaneous diseases, with no special diagnosis, reach the large number of 2,216. It is a singular fact that, where opium smoking is so common, only 3 cases of opium poisoning should be recorded as received for treatment. The report is singularly barren of all particulars explanatory of its statistical tables.

The contagious diseases act is reported to work admirably, a deduction from the weekly army and navy reports, which record scarcely any disease contracted from licensed prostitutes, and from the gradually diminishing number of venereal cases admitted to the hospitals. Sixteen hundred and six prostitutes were registered in 1882, divided into two classes, one comprising the Chinese, who are compelled to report and be examined monthly, and the other comprising "all nationalities," who are examined weekly, and, if found diseased, retained for treatment.

Singapore has a botanical garden, with a fine collection of tropical flora, an institution similar to the Asiatic Society of India, for philological study, and many schools for the education of the various races forming its population.

The island, of which Singapore is the chief city, is about 25 miles long, and 10 to 12 miles in width. Its coasts are swampy, and covered with a thick jungle of mangrove, but its center and western shore are elevated into many hills covered with forests, some of them 500 feet in height. In the lowlands the soil is rich, but in the hills it is far from fertile, though the island, as a whole, is very productive. All the spices are raised here for export, and also sugar, sago, tapioca, ginger, and caoutchouc.

The Straits Settlements, though in the region of the monsoons, have, from their situation, with high land upon either shore, very variable winds to the north of Singapore, but at the latter island the regular influence of the monsoons are felt to a certain degree. Rain falls, however, each month in the year abundantly, and the average amount, deduced from a series of observations extending through four years, is 92.697 inches, though the fall in 1882 was but 79.92 inches. The maximum fall was in January, 1876 (January 10), and the minimum March 12, 1862. The highest temperature was on June 16, 92° 16, and the lowest on January 23, 69° 23. At Penang rain falls throughout the year, and in 1882 was 126.30 inches. The range of the thermometer was

from 76° to 90°. It is considered a most healthy climate, and its mountains, where the temperature varies from 64° to 76°, offers a perfect sanitarium, with some of the grandest scenery in the world.

The markets are well supplied, in both Georgetown and Singapore, with everything to satisfy native or foreign desire.

The food of the people is much like that of the Burmese, curry and rice with countless savory condiments being their chief dish. They also eat largely of fruit, soup, shell-fish, vegetables, and a jelly made of sea-weed. All these articles of food are sold upon the streets by itinerant venders, who carry, suspended from a bamboo pole across their shoulders, a portable stove, and a cupboard containing table furniture, as well as all the various ingredients of the favorite Malay dishes.

The Malays as a race will be written of in connection with Java.

JAVA.

The island of Java is the most fertile and populous of all the islands constituting the Malay archipelago. Its length is 575 miles, its breadth varies only from 48 to 117 miles, and its area is computed at but 37,029 square miles, yet it has a population of 14,000,000, of which less than 30,000 are of European origin.

Java is essentially a volcanic formation, a chain of mountain peaks running through the center of the island, thirty-three of which rise to a height of 5,000 feet, several of them to a height of 12,000 feet, and a few are more or less active volcanoes. Basalt and trap abound in the mountain formations, and there is here and there limestone and granite. Hot springs are numerous in the vicinity of the active volcanoes, and mud springs furnishing chloride of sodium are found in the valleys.

There are several large rivers, the principal ones being the Solo and the Brantas. There are also many mountain lakes and small streams, all of which furnish the means perpetually, in this humid climate, of carrying out a most perfect system of agriculture by terracing and irrigation. The alluvial regions have a soil 12 feet in depth, and the extensive tract which stretches along the northern side of the island is probably the most fertile plain of the world; rice, sugar, and coffee are the principal productions for export; indigo, pepper, tobacco, and cotton are also raised in large quantities, and cinchona cultivation is assuming great importance.

The flora of Java is very extensive, embracing every tropical plant in the lowlands, and in the mountains, oaks, laurels, and the coniferæ abound. Coffee is cultivated at a height of 2,000 feet and cinchona at an elevation of seven or eight thousand.

Among the fruits peculiar to Java and the Malay archipelago is the mangosteen (*Garcinia mangostana*), a tree allied to that which produces gamboge. It is a tree of moderate height and a conical head, its branches furnished with glossy, leathery, elliptical leaves. The fruit is of a yellowish-brown color, resembling the pomegranate in size and appearance and its flesh is white arranged in partitions around the seeds. The juice is of an exquisite flavor, suggesting the strawberry and grape, and by many is considered to surpass all other fruits.

The fauna of Java includes one hundred species of mammals embracing several species of quadrumana, a peculiar species of rhinoceros, the Bengal tiger, several leopards, and the wild ox, as well as many species of the deer and the wild hog. Bats are numerous, twenty-two species being described. The birds include peacocks, partridges, quail, pigeons, herders, falcons, owls, and crows. Serpents abound and also croc-

odiles and lizards, while along the coast fish and sea-turtle are plentiful. Of the domestic animals the horse and the buffalo are the most important, the former being a tough pony.

The Malay race is not far removed from the Indo-Chinese to which division the Burmese belong and the natives of India. In this branch of the human family the natives of the Straits settlements and the island of Java are classified, differing but slightly in other general features and characteristics. These are, short stature, generally 2 inches shorter than the typical Caucasian, oblique black eyes, or dark hazel, prominent cheek-bones, and small prominent straight nose, black straight hair, and a straggling growth of hair constituting the beard, while the body is completely hairless. The natural color of the skin is a light reddish-brown, which is often stained yellow by henna and turmeric, and their broad lips are congested and swollen by the use of the betel. They are a robust, well-formed race, with hands and feet both small and delicate.

The Javanese differ in no important particular from the Malay type.

The dress for men and women of the lower classes is a jacket and skirt of cloth, with a gaudy handkerchief wound around the head. Loose trousers are worn by the better classes. This is the dress worn in the Straits settlements. With the Javanese it is somewhat modified, the principal article being what is known as the sahrong, a large piece of gaudily-printed cloth worn as a skirt, to which is added a closely-fitting Arab jacket and, perhaps, wide trousers. The lower classes are often clothed in a simple breech-clout.

The Javanese head-gear consists of finely-plaited bamboo hats, some of huge dimensions, others small, and made in various shapes, the most common form being that of a large basin. These are worn by the men, the women twisting a handkerchief around the head.

The Malays proper are esteemed an indolent people, a race of gamblers, drunkards, opium-eaters, thieves, cut-throats, and pirates. The Javanese, on the contrary, are sober and industrious. They are skilled agriculturists, and excel in the working of metal, especially brass and copper, in ship-building, the manufacture of bricks, and coarse pottery. Good cotton cloth is woven, and silk to some extent, the raw material being brought from China, and the former is printed very artistically in brilliant colors to form the sahrong, which is the peculiar and distinctive article of native dress, though adopted also by foreign ladies.

The food of the Malays and Javanese is similar to that of the Burmese. Rice is the principal article of diet, and fish, rice, and curry, with its associated pickles and condiments, the chief dishes. Hashed meats, flavored with rosewater and jessamine, half-hatched eggs salted, salted fish dried in the sun while alive, and slices of cocoanut rolled in pimento are representatives of native delicacies. The practice of betel-chewing is common alike to all the divisions of the Malay race.

BATAVIA.

Batavia, the capital of Java, is situated in latitude 6°, 10' south, and longitude 106° 50' east. Its location is a reclaimed swamp, through which flows a small stream confined within narrow walls, and thus converted into a navigable canal which extends for some distance into the roadstead, a busy scene of traffic, always crowded with outgoing and incoming steamers, freight barges, and small craft.

The old city, near the sea, is compactly built, and embraces a large Chinese and native town, and a mercantile center, where most of the foreign business is conducted, principally by the Dutch and Germans.

Two miles inland, however, a new city has sprung up on what are known as the Heights of Weltervaedden, which is connected with the old quarter by a steam tramway.

The new city is very beautiful. The hotels, clubs, public buildings, churches, and private bungalows are all fine structures, surrounded with spacious and shaded grounds, the streets are broad, macadamized thoroughfares, and the public squares extensive fields. The roads are supplemented by canals, extending through the towns in every direction, into which flow the waters of a mountain stream, the Jacatra. Where conveniently located, the canals afford the means of bathing, doing the family washing, or cleansing the household utensils; and in spite of the sewage and filth which find their way into these channels, to be carried away by the tide, they are thronged the whole day long with washermen and women and servants bearing trays of table-ware to be cleansed in the filthy water, while in the early morning the lower classes all come here for their daily toilet and bath.

The private bungalows of Batavia, while modeled on those of India, are generally more highly ornamented. They are of one story, comprising a large central building and wings, with verandas of great width, often paved with marble or colored tiles, and ornamented with statuary and vases of flowers, forming rooms for dining and reception purposes during the hotter months. The wings extend backward to form the sides of a court, on which the rooms open beneath a covered corridor, and each house is generally supplied with a luxurious bath-house finished in marble. Most of these bungalows are surrounded by groves of lofty trees, including the feathery bamboo, the India-rubber tree, with every form of palmaceæ, and a jungle of flowering shrubs, through which graveled roads lead to the portico.

The houses of the poorer Javaese are built of bamboo and thatched with palm leaves, but the wealthier natives build much in the Chinese style, their dwellings being well constructed with tiled and highly ornamented roofs.

The King's Plain is the favorite place of residence, on the borders of which are located the governor's palace, official residences and departments, and the bungalows of the wealthy. It is an immense shaded park in the center of the city, four miles long and half a mile in width, where reviews are held and the military bands play in the cool of the evening, while the world of Batavia is abroad in carriages or on horseback. At other times it has a peaceful, rural look, with cows grazing on the green lawn.

The population of Batavia is put at 650,000, and includes Malays, Europeans, Chinese, Moors, and Arabs, half the number at least being Chinese, who are the artificers of the city.

There are two seasons in Java, the dry and the wet, the former extending from March to November and the latter completing the year. The wet season corresponds to the northwest monsoon and the dry to the southeast, but the terms are only relatively applicable, as rain may occur in the dry season, and periods of drought are not infrequent during that which is termed the wet. The annual range of temperature in Batavia is 60° to 90°.

The water supply is obtained from the canals and from artesian wells. The municipal government has established a system of artesian for supplying the city, which promises to be completely satisfactory, and overflowing wells are so easily obtained that they are found connected with all the hotels and on many private premises.

Batavia has generally been considered a very unhealthy place, and the old city was termed the grave-yard of Europeans in the early period of its history, when it was a net-work of canals. The French, however, during their short occupancy of the city, improved its sanitary condition by filling up the majority of these pestilential inlets. This location is still a highly malarial region, but the new city has given to Europeans a residence by means of which they can easily escape its pernicious effects. Both cities are now well drained, and the old city, even, no longer deserves its former opprobrious reputation.

There is no civil hospital in Batavia, the military hospital receiving all patients, whether citizens or soldiers. It is a large institution, with wards in the form of detached bungalows. The most common of the local diseases is dysentery, due to the habits of the natives and the drinking of canal water, which also maintains cholera as an endemic disease. An insane asylum is located at Buitenborg. Buitenborg is the sanitarium of Batavia, at a distance of 30 miles, reached by rail. It is situated amongst foot-hills at the base of the great volcano Gronung Selele, and is just sufficiently elevated to temper perfectly the heat of the coast, without rendering the change of climate too radical. It is a scene of luxuriant vegetation, mountain streams, and balmy atmosphere. The governor-general of the Dutch East Indies has his vice-regal palace here, and here also is located the celebrated botanical garden, with its great wealth of tropical plants, all carefully classified for the purpose of study. But it is also a fine landscape garden, with its lofty trees, avenues of palms, groves of graceful bamboo, rocks clothed with flowering vines, tree-ferns, gorgeous orchids, and lakes covered with the beautiful blossoms of the lotus, or the gigantic flowers and leaves of the *Victoria regia*.

The zoological gardens of Batavia are attractive only for their large collection of adult orang-outangs, whose almost human actions form a remarkable study. Strange to say, this animal (*Simia satyrus*) is not found in Java, but seems to be confined entirely to the neighboring islands of Borneo and Sumatra.

The average height of an adult orang is about 4 feet 10 inches, according to Wallace, and standing erect the fingers touch the ground, the extended arms measuring 7 feet 3 inches to 7 feet 8 inches. The orang-outang maintains the erect position without difficulty, though in progression his position is generally semi-erect, the *knuckles* touching the ground.

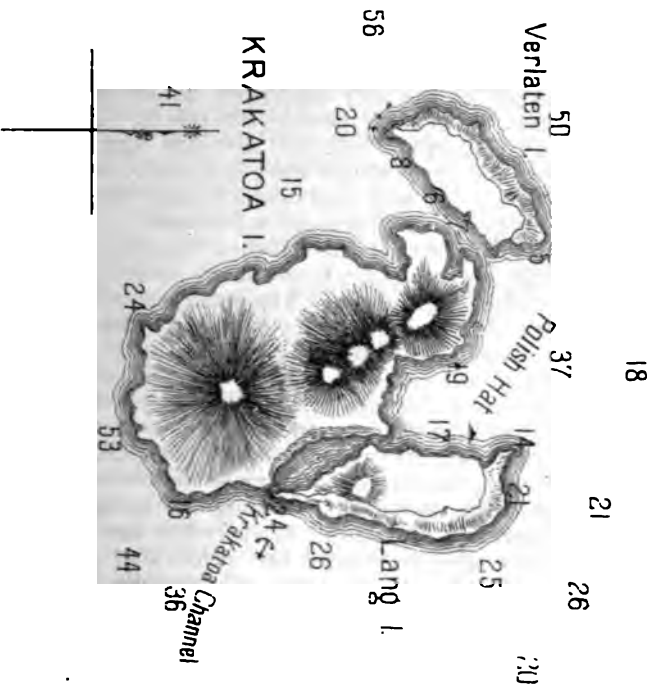
The strength of the orang is prodigious, and he is said to kill the crocodile and python without difficulty. The Batavian specimens are docile and very imitative, smoking cigars and amusing themselves by "pitching pennies" with apparently an intelligent comprehension of the game.

In the matter of education, the Dutch Government has been very liberal and also in the matter of medical service. Free schools have been established throughout the island, and competent physicians and vaccinators located in every district.

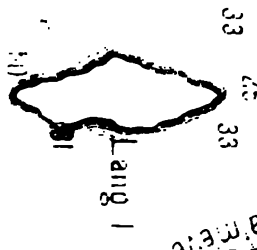
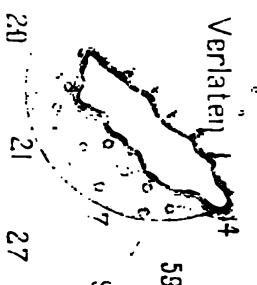
THE STRAITS OF SUNDA AND ERUPTION OF KRAKATAO.

From Batavia the Juniata proceeded, under orders from the Navy Department, to the Straits of Sunda, for the purpose of offering assistance to the survivors of the terrible calamity of August 26, 1883, when, succeeding an eruption of the volcano of Krakatao, a tidal wave had

Before Eruption.



(c) THE VOLCANIC ROCK



KRAKATOA I 44

AFTER.

swept over the southern coast of Sumatra and the northern shore of Java, obliterating towns and villages and drowning thousands of people. **Krakatao** (situated in latitude $6^{\circ} 7' 8''$ south, and longitude $105^{\circ} 26'$ east, 26 miles west-southwest from the town of Anjer) is one of the most prominent of the many islands in the Straits of Sunda, being 2,750 feet in height, and, with its many coves, has always been a well known landmark to all navigators entering the Indian Ocean by this gateway to the East. Verlaten Island lays to the northward and westward, and Long Island, to the northward and eastward, is only separated from it by a narrow channel, the general opinion prevailing amongst geologists that these smaller islands are portions of the margin of an old crater, while the peaks of Krakatao are elevations within the crater itself.

The last record of volcanic action in Krakatao was in 1682, when, in the month of May of that year, preceded by local disturbances for a period of nearly two years, an eruption occurred lasting for a considerable period. It then became quiescent and so remained for almost exactly two centuries up to the month of May, 1883. On the 20th of this month earthquakes were felt in Batavia at 10.30 a. m., continued through the 21st, though at Anjer and other nearer points no disturbance was felt. On the 21st smoke issued from the mountain, and on the 22d it was fairly in a state of eruption. The crater was below the summit on the side toward Verlaten Island, and within a few days was ejecting steam, smoke, dust, pumice, and molten stone, accompanied by great noise. The smoke and dust rose in gigantic columns with a terrific roar to a great height, part of it being carried by the monsoon to the westward, and an upper current transporting it eastward, so that on the 24th it was deposited in places more than a thousand miles distant. To the westward it descended on the decks of vessels, and as they approached the straits great quantities of floating pumice were encountered. The disturbance now being local, public interest in the eruption ceased, and no alarm was felt up to the day of the great catastrophe.

The first record of increased activity is the 21st of August, when the fall of pumice and ashes was so great that ships feared to enter the straits. This continued up to the afternoon of the 26th of August, when the volcano became still more active, accompanied by explosions at short intervals, and at 4 p. m. of this day the waters receded, immediately rolling in upon both shores of the Straits, inundating the villages and doing much damage. It, however, created only a temporary alarm, most of the people of Anjer flying to a cemetery on slightly elevated ground back of the town, but on the recession of the tidal wave returning to their homes, a few only seeking the security of the mountains.

Simultaneously with this tidal movement the sky became of an inky blackness, and at Batavia, 80 miles distant, the fires of the volcano could be seen with a great column of smoke issuing above them, around which the lightning was constantly playing, and ashes were deposited within a few hours at distances of 500 miles. Ships in the vicinity were involved in the electrical storm, and their decks strewn with fine pumice or ashes. The magnetic and barometric disturbances were very marked from this period, the barometer constantly fluctuating, and compass needles being in continual motion.

Thus the night passed away until 6 a. m. of the 27th, when a most terrific explosion occurred, heard on the coast of India and in the Straits settlements, and, within half an hour, the waters receded as on the previous evening, though to a lower point, and returning as a lofty wall of water swept both coasts, crushing houses, leveling forests, and carrying

out to sea as it declined nearly 30,000 people, the fragments of their houses, and countless bodies of domestic and wild animals. During three days the volcanic activity continually augmented, throwing out incalculable masses of material, maintaining an impenetrable sky over both Sumatra and Java, the complete darkness constantly broken by the play of lightning over the dark vault.

Between 10 and 12 a. m. of the 27th of August, the final act occurred in a series of terrific explosions recognized at a distance of 1,500 miles, and this great outburst of internal fires, the most remarkable of the century, was at an end.

On the morning of the 28th the sky began to clear, and in a few hours the sun was shining on the scene of devastation, ruin, death, and wreck of mountains. Ships approaching the straits for several days had to pass through shoals of dead bodies of human beings and animals, including many tigers, material of buildings, forest trees, and masses of pumice. Late as our visit was in the vicinity of the volcano, large quantities of pumice constantly floated by the ship.

Anjer was a small town situated at the eastern extremity of the straits, and a place of call for all ships going to and returning from the East, where they received orders and obtained supplies. It was a well-built place, with an iron landing-pier and a light-house, and was the point of landing of the European telegraph cable. It was situated in a plain gradually rising towards the volcanic peak of Kurang, 5,943 feet in height, and was set in the midst of luxuriant groves of palms. Opposite to the town, and in mid-channel lies "Thwart the Way," an irregular wooded island rising to the height of 450 feet.

We found "Thwart the Way" island swept, as by some mighty plow, great swaths of palms mowed down by the rushing tidal wave, which had completely destroyed its well-known features, giving rise to the report that it had been separated into five distinct islands.

Landing at Anjer we came upon a scene of most complete desolation. Anything more utterly complete is inconceivable. The iron pier was represented by a few twisted rods; the light-house was gone, and of the city not a vestige could be seen. The whole plain was a *chevaux-de-frise* of prostrate cocoanut trees, intermingled with sand and fragments of coral rock. A few household utensils were to be seen, a few splinters of furniture, bits of clothing, broken crockery, and childrens' toys, but only fragments; houses and people, and everything not entangled in the fallen timber, having been washed into the sea.

We found two or three poor fellows wandering among the ruins who told us their tale of woe, which was simply that they were among the few who had sought security in the hills and escaped the second fatal wave, but had lost every relative and all their possessions. They were living on the cocoanuts, which plentifully strewed the ground, oblivious to the sickening odors which emanated from beneath the *débris* of fallen timber where we could see the crushed bodies of many poor creatures decomposing rapidly under the influence of a tropical sun.

We made a superficial survey of the channel through the entire straits, and an exploration of Krakatao and its vicinity between the 8th and 12th of September.

Krakatao is the western landmark of the Straits of Sunda, and has been described as rising to the height of 2,626 feet, the highest of several prominences in a mountain range running in a direction nearly from north to south for a distance of $1\frac{1}{2}$ miles. It was an island of rocky barren hills, about 5 miles in length, with an average breadth of 3 miles. It was separated from Long Island by a narrow channel one-half to one-

quarter of a mile in width, had Verlaten Island to the northwest, also separated by a narrow channel, and a small round island, the "Polish Hat," to the westward of Long Island. Bezee, lying 12 miles to the northward and eastward of Krakatao, has a peak rising even higher than that of the latter, and before the events of August 26, was a fertile island, on which a large colony was engaged in the culture of pepper. The two channels, traversed by ships bound to and from Anjer, were the Great Channel, following the line of the northern coast, and the Bezee Channel, between Krakatao and Bezee Islands.

The features of all these related landmarks were now much altered. The whole northern portion of Krakatao with its short mountain range of three peaks, had disappeared, and one-half of the volcanic cone, with the crater on its western face, seemed to have been split off, the extinguishing of its fires causing the tidal wave which had swept so disastrously over the adjacent shores. Sand and fragments of pumice were rolling down its fractured surfaces, raising small clouds of dust, which appeared like jets of steam, and the slopes of the island, once covered with verdure, were now spread with lava and ashes. Long and Verlaten were also covered with a deep stratum of lava, the former being somewhat elevated, and the "Polish Hat" had disappeared. Bezee had been devastated by the tidal wave, its plantations destroyed, and all its inhabitants, a thousand in number, drowned with one single exception. The Great Channel was found to be unaltered, but in the Bezee Channel two new islands and shoals had formed in water where previously there had been 30 to 40 fathoms, rendering this route a dangerous one until new surveys should be made. The changes near Krakatao are a greatly increased depth of water near the shore opposite Long Island and the elevation of two small islets.

The extent of the disaster in Sumatra was probably greater than in Java, the tidal wave reaching a height of over a hundred feet. At Telok Baton Bay, the Dutch admiral's premises, on a bluff 104 feet above the beach, was invaded, and the house nearly destroyed, while of three hundred chiefs assembled at a certain rendezvous to negotiate with the Dutch resident not one escaped.

Within a brief period after our departure from the Straits of Sunda careful surveys were made by the Dutch and English Governments, and charts showing all the various changes were at once issued. The various phenomena attending this remarkable event were also carefully studied by competent scientific men, who have published their conclusions embodied in many scientific papers.

All seem to agree that the repeated explosions were caused by an admission of water into the crater through subterranean openings causing a rapid generation of steam. The first of the two tidal waves is supposed to have been caused by a portion of the island being detached and carried to the northward, where it now constitutes, on the new chart, Steers' Island; and the last great wave was coincident with the actual lifting of a large portion of Krakatao, which was *projected* through the air, over Lang Island, a distance of 7 miles, in a northeasterly direction, where it now forms the island of Calmeyer, it being completely proven by analogies of formation, that these are not upheavals, but actual *fragments* of Krakatao.

To fill the vacant spaces left by the separation of these great mountain masses, the water flowed in upon the volcanic fires, causing a recession along the shores, and a subsequent advance as a great tidal wave, with the terribly fatal results already described. Strange to say, these waves are unrecorded by ships in the vicinity on the 27th, though the

undulations were recognized and noted in many remote regions, as in South Africa, the Mauritius, Japan, and the other Pacific islands.

Two ocean currents have been noted as moving east and west, and corresponding atmospheric currents have been demonstrated by the ashes, or fine pumice deposited in their course; and the products of combustion sent upward in the great column which rose from the crater of Krakatao during the period of its greatest activity, and were projected to an incalculable height above our atmosphere, are supposed by many scientific men to have caused, in their slow descent, the various phenomena of colored skies so constantly observed in almost every quarter of the globe during a period of many weeks succeeding August 26, 1883, the day of most violent eruption.

These phenomena made a regular progression from places in the vicinity of the Malay Archipelago to the China coast, Japan, the more eastern Pacific islands, the Pacific coast of the United States, and Mexico, and so on in their journey around the world.

Dr. Eldridge, of Yokohama, furnishes me the following memoranda of the atmospheric effects in Japan :

On August 27, during the afternoon, the sky became hazy, the obscuration gradually increasing until, at sundown, the sun appeared like the red full moon. August 28, the obscuration was intense, sky uniformly overcast with what appeared like, or produced the effects of, smoke, save that it was uniformly distributed. At noon the sun was a dull red. The natives were intensely excited and alarmed, the oldest inhabitant having had no such experience. August 29 and 30 much the same, but obscuration diminishing. September 1, clearing. September 2, still some obscuration, but slight. September 3, clear. But to this succeeded a long period of peculiar sunsets and sunrises, prolonged dawn and twilight, with various discolorations of the sun's disc. During the period of the red suns and hazy skies there were light westerly winds, and an unusually high barometer.

REPORT ON THE CONDITION OF THE NAVAL MEDICAL SCHOOL AT HASLAR, ENGLAND.

By Medical Director J. M. BROWNE.

MUSEUM OF HYGIENE,
BUREAU OF MEDICINE AND SURGERY,
Washington, December 22, 1884.

SIR: In obedience to the orders of the honorable Secretary of the Navy, dated June 13, 1884, I visited the naval medical school at the Royal Naval Hospital, Haslar, England, and in conformity with your special instructions of June 24, 1884, I herewith transmit my report on the condition of the said naval medical school, together with an account of the reorganization of the sick-berth staff of the royal navy.

Very respectfully,

J. M. BROWNE,
Medical Director, U. S. N.

Surgeon-General F. M. GUNNELL, U. S. N.,
Bureau of Medicine and Surgery, Navy Department.

NAVAL MEDICAL SCHOOL AT THE ROYAL NAVAL HOSPITAL, HASLAR.

In a former report to the Bureau of Medicine and Surgery, I noticed the appointment of a committee, by the admiralty, to report upon "the question of the examination necessary for candidates for admission to the service, and also in regard to the advantages or disadvantages of Netley hospital for the use of the naval medical profession."

In the minutes of evidence taken by the committee the weight of testimony was in favor of establishing a medical school at the Royal Naval Hospital, at Haslar, in preference to continuing the instruction of newly-appointed naval surgeons at the army medical school at the Royal Victoria Hospital, Netley. The committee recommended the change because—

The advantages of the present system of passing a young officer intended for the navy through the Netley course appears to us insufficient to recommend its continuance in face of the disadvantages arising from his being brought into contact at the most impressionable age, with a condition of service differing so greatly from that which will constitute his future life, and in view of the possibility of making as good or better arrangements for a similar course at Haslar hospital.

The loss of the highly organized system of lectures established at Netley is, no doubt, a matter for serious consideration; but we are of opinion that the training of our young officers by those with whom they will hereafter be thrown, and who are thoroughly conversant with naval requirements and life on board ship; the naval associations to be found at Haslar and in close proximity to it; and the fact that while at Netley the cases are principally of a chronic invalid character, at Haslar not only such as these are found, but also the current casualties of the service, together constitute a reason for transferring our school to the latter place, the force of which cannot be resisted.

Such a change would also have the effect of providing, in the appointment of the lectures, an opening which does not at present exist in the navy for talent of that description; it would, moreover, work in with a subject which has been brought to our notice, viz, the improvement of the training and position of the sick-berth staff, which at present are very faulty, and call loudly for reform.

The recommendation having been approved by the lords commissioners of the admiralty, authority was given to establish a medical school at Haslar.

Walter Reid, esq., M. D., staff surgeon, was placed in charge, and commenced the instruction, assisted by Henry B. Collins, esq., surgeon, both being attached to the medical staff on duty at Haslar, and for these services they received additional pay. The former report mentioned the cost incident to the equipment of the school, the number of the newly appointed surgeons in attendance, their surroundings and expenses, the system of teaching, character of examinations, regulations for the entry of candidates for commission, and a brief description of the Burlington House examination. My first visit to Haslar was in August, 1881, soon after the close of the first session of the new school. My second visit occurred in September, 1884, in company with Surgeon J. Rufus Tryon, U. S. N. We were cordially received and hospitably entertained by Dr. Reid, who has been in charge of the school from the beginning, and has received a deserved promotion to the rank of fleet surgeon. Surgeon Gilbert Kirker, succeeded Surgeon Collins, as assistant instructor. Sir John Watt Reid, director general of the medical department of the navy, had informed me of the pronounced success of the medical school, and that the transference of the newly appointed surgeons from Netley to Haslar for instruction occasioned no regret; consequently I was prepared for the advance made since my first visit.

The Royal Naval Hospital is under charge of James N. Dick, esq., recently honored by being made an inspector-general of hospitals and fleets. Dr. Reid, in addition to his duties as chief instructor at the school, is a member of the hospital staff, and has charge of the surgical section. Dr. Kirker, the assistant instructor, also performs duty at the hospital.

Of the twenty-six young gentlemen who had passed the Burlington House examination and received commissions as surgeons, sixteen were ordered directly to Haslar for instruction, and ten were ordered to stationary ships at different ports. The limited accommodation at Haslar necessitated this disposition of the class. The session of the school this year commenced on the 1st of September, and will continue until the last of December, the months of September and October to be given to the instruction of the first class, who will, at the expiration of two months, be sent to sea, and will be succeeded by the second class for a similar period. Whenever suitable accommodation shall have been provided, the entire class each year will be sent to Haslar, and the course of teaching will occupy four months, instead of two as at present. As the young surgeons go directly from the Burlington House examination to the school, they are presumed to be thoroughly qualified for the performance of their profession in civil life, the object of the Haslar instruction being to make them conversant with naval hygiene, and possessed of a knowledge of the construction of ships in relation to sanitation, and before going to sea to have an acquaintance with naval discipline and the duties of a medical officer afloat, heretofore only acquired when actually at sea.

During the period of instruction the young surgeons are in turn on duty in the medical and surgical wards of the hospital, under the direction of the officers in charge, and are required to write up cases, keep journals, practice with the microscope, apply bandages and splints, and perform details of minor surgery; in case of a death two make the autopsy, and a third takes notes and declares the pathological con-

ditions found. This autopsy furnishes questions which will be given them to answer at the final examination.

After the hospital duties of the morning are finished, the class meet in the laboratory to work under the teaching of Dr. Kirker. At the time of our visit the subject was the qualitative examination of water. Two of the young surgeons worked together; then, when all had finished, the result of the many analyses were noted upon a blackboard to show and compare the results obtained by the eight divisions of the class. The subsequent lessons of the course will embrace the quantitative examination of water, the examination of food, looking for adulterations, the impurities of air, &c.

The walls of the laboratory are covered with diagrams, plans, and sketches of the various classes of ships, designs for ventilation, heating, construction of frames, sectional drawings of Normandy's condenser, views of ambulance lifts, and other objects.

A lesson similar to the one noticed is given by Dr. Kirker each morning; the class then proceed to the library, where a lecture is given by Dr. Reid; these lectures commence with the application of the principles of hygiene to ship life in particular; first air, then ventilation, heating, food, clothing, &c. On the occasion of our visit the subject was the ventilation of ships, illustrated by models of cowls and ventilators of a variety of form, described in a happy way by Dr. Reid.

In the afternoon the class is taken to the Portsmouth dock-yard under the guidance of Drs. Reid and Kirker, to examine ships in different stages of construction, from the plans to the laying of the keel, after launching, during fitting, after completion, and in commission. Here the young surgeons are first made acquainted with the drawings of a certain class of ships under the teaching of a draftsman supplied by the construction department. Having become familiarized with the drawings, the class is taken to a vessel of the same order in process of building to observe the peculiarities of construction, ventilation, heating, and berthing, and when well taught in this respect the field of instruction is changed to a like vessel in commission, and for a third time an acquaintance is made with the methods of construction, means of ventilation, berthing facilities, and other details pertaining to sanitation, together with naval discipline and the duties of a medical officer at sea. This instruction is not limited to a single class of ships, but includes all orders on stocks at the docks and in commission.

The class is taken to the Royal Clarence Victualling Yard, Gosport, where the bullock is shown before being slaughtered. The butcher gives the points of the animal, kills, explains the proper bleeding, cuts up, describes the parts, the appearance presented when rightly slaughtered, explains the look and qualities of good, inferior, and bad beef, of tainted, decayed, corned, and dried beef. Subsequently samples of each are examined in the laboratory, together with the testing of the fitness of preserved meats. Then comes the tracing of a sack of wheat through various processes until it becomes bread. Other articles of the ration are similarly considered. Clothing is inspected as to quality and make, and when defective, how it could be improved. It follows, then, that the system of teaching as described has for its object the fitting of young surgeons for duty at sea. It includes a variety of subjects, such as, in a general way, the structure of ships of wood and iron, ventilation, and all matters connected with atmospheric conditions; water supply and means of analysis; cleanliness and the washing of decks; the whole subject of diet, the potential energy of food, clothing, and

tropical conditions; prophylactic hygiene in relation with malarious and contagious diseases and scurvy; antiseptics, disinfectants, conservancy, fumigation, and isolation of the sick; discipline and duties.

For want of time in the limited session no attempt has been made to give instruction in cooking, as wished for and originally intended by Dr. Reid. The future will probably afford other instructors, for the success of the school is well established. At present it supplies to the newly appointed surgeons better special teaching for the naval service than Netley, whose training is for the army; with the improvements that assuredly will come all that is desired will obtain, and the school will be complete in appointment. With Drs. Reid and Kirker, and the young surgeons, we visited the Portsmouth Dock Yard, where a practical lesson on ventilation was had on board H. B. M. Ship Mercury; afterwards the Collingwood and Colossus, recently launched, were inspected, and the Camperdown, on stocks; the latter, of steel construction, has the following dimensions: Length, 330 feet; breadth, 68 feet 6 inches; depth, 26 feet 2 inches; tonnage by displacement, 10,000; horse power, 9,800; battery, 4 63-ton breech-loading guns en barbette, and 6 6-inch guns, breech loading.

For the class two wards of the hospital have been fitted expressly for their quarters in a neat and comfortable style. One ward has been arranged to afford thirteen chambers, the partitions forming the same being about one-half the height of the walls of the ward, and these chambers are numbered from 1 to 13, and occupied by those who took corresponding numbers in the initiatory competitive Burlington House examination. Three of the young surgeons were located in rooms heretofore given to sick officers, but it is intended to have accommodation for the whole class, so that all may come at the same time for instruction, and instead of a session of two months as already stated, one of four months will be instituted. The class is provided with drawing and dining rooms, a kitchen, scullery, butlers, store and bath rooms. The mess is in common with that of the medical officers of the hospital, but ultimately will be separated, giving the class its own. In the extensive grounds adjacent to the quarters are spaces assigned to the practice of cricket and lawn tennis, which, with rooms set apart for billiards and cards, afford ample means for recreation.

The close of each session is followed by an oral examination upon the teaching had at the dock-yard and victualling department; a clinical examination in a ward, and a case given for a written description, including its history, cause, symptoms, diagnosis, prognosis, and treatment; a practical examination in the laboratory, consisting of testing, chemical analysis; and work with the microscope.

The written examination occurs on the first day upon questions previously submitted to the medical director general of the navy for approval, and at the end of the last session were as follows:

I. THE PRINCIPLES OF HYGIENE.

1. What do you understand by free and albumenoid ammonia in water analysis? Point out their relative significance as indications of hurtful impurities.
2. What are the changes produced in an atmosphere by respiration? Explain in what way they render it foul and unfit for purposes of health.
3. Describe the various steps you would take in order to ascertain the quality of wheaten flour, and state the point by which you would be guided in arriving at a conclusion as to its wholesomeness and fitness for use.
4. Give an account of the clothing worn by the blue jackets of the fleet, with a detailed opinion as to its qualities from a hygienic point of view.

II. MILITARY MEDICINE AND SURGERY.

1. In campaigns in tropical and subtropical countries what disease is most fatal to the troop?
2. State the conditions under which it has been observed to develop, (b) the views regarding its etiology, (c) its prevention, and (a) its treatment.
3. Describe how in the various tissues wounds produced by the modern rifle bullet differ from that produced by the old round one, and state the principles of treatment founded on the nature of the former.

III. PATHOLOGY.

1. Give a brief outline of the post mortem appearances found in the autopsy of a case of spinal disease; state in what localities abscesses arising from suppurative disease of the spinal column present themselves; enumerate, also, the situations in which suppuration may give rise to abscesses appearing in the groin, and state the diagnostic points in each case.
2. Give an account of the morbid changes which take place in tissues and organs as the results of constitutional syphilis.

IV. PRACTICAL HYGIENE.

1. Make a report on the sample of water from the following examination :
 - (a) Quantitative analysis; lime; sulphuric acid; muriatic acid; nitric acid; phosphoric acid; oxidizable matter.
 - (b) Chlorine; ammonia (free albumenoid).
2. Determine the amount of fat in the sample of milk by the lactoscope.
3. Find out by what other flours the sample of wheaten flour is adulterated.
4. (a) Read the barometer and reduce the reading to 32° F. at mean sea tide.
- (b) Read the wet and dry bulb thermometer and find—
 - (1) The dew point; (2) the relative humidity.

The results of the examination are determined by marks, 3,000 in all, of which principles of hygiene has 1,000, practical hygiene 1,000, military medicine and surgery 400, pathology 200, journal-keeping 400, subdivided into neatness, originality, care-taking, and literary merit, each 100. The highest number taken in a class of 13 was 2,705, and the lowest 1,560. The finding is reported to the director-general for his information as to the respective fitness for certain duty, and to enable him to reward by appointment to favored ships or stations. The numbers awarded in the Burlington House competitive examination are constant, hence the examination at Haslar does not affect the precedence, but rewards by appointment to the most desirable duty.

With an increased knowledge of the method of training at Haslar, and an assurance from the highest authority that the result is highly beneficial to the medical corps of the royal navy it is warrantable to repeat the concluding words of a former report :

The new system of preparatory education for sea-duty of naval surgeons newly commissioned, as adopted, and by experiment found satisfactory in the royal navy, by virtue of its directness, feasibility, economy, and proficiency, prompts the wish for its introduction into our service. No one can honestly question the desirability of having our assistant surgeons thoroughly conversant with naval hygiene, and possessed of a knowledge of the construction of ships in relation to sanitation, and before going to sea to have an acquaintance with naval discipline and the duties of a medical officer afloat, which can only be acquired at sea, or by means of instruction like that furnished at Haslar. The naval hospital and laboratory at Brooklyn could furnish the requisite accommodations at a moderate cost: the navy-yard in proximity could be made available, and naval medical officers for teachers are always procurable. If a course of instruction as detailed was provided it would supply an existing want and redound to the common good of the naval service.

THE SICK-BERTH STAFF OF THE NAVY AND THE NURSING STAFF OF THE ROYAL NAVAL HOSPITALS.

The committee appointed to inquire into the organization and training of the sick-berth staff of the navy and the nursing staff of the royal naval hospitals recommended the abolition of the class of male (civil-

ian) nurses, and the substitution of a trained sick-berth staff for service, both afloat and ashore; this staff to be recruited as far as possible from boys educated at the Greenwich Hospital School, the employment of a limited staff of sisters in certain hospitals who, in addition to their nursing duties, shall train the boys of the sick-berth staff, and the reorganization of the hospitals and divisions into sections for nursing duties.

The new system is to have its beginning at Haslar. In the third story of the center or administration building, which connects the medical and surgical blocks, a very large ward was being fitted for the accommodation of the nurses appointed under the recommendation of the Sick-Berth Commission. The number at first will be fifty; subsequently the nurses absent in ships or on duty at other stations will be added, and ordered to Haslar for training as soon as practicable. Haslar will become the training school for these nurses, and from this school all the nurses for the naval service at present required, ashore or afloat, will be taken.

The future supply will be derived from the Greenwich Hospital School, where boys, sons of seamen and marines, are received at the age of ten, and kept until of fifteen and a half years of age, educated in the common branches, and practically taught in certain trades. When fifteen and a half years old they are sent to sea in brigs to acquire a knowledge of naval duties, habits, and discipline, together with physical training. Of these boys, the best are taken into the service, and ultimately become seamen, while others go into civil life, and engage in following the trade for which instruction has been received. Upon entering the school at the age of ten a rigid physical examination is had, and a like examination at the age of fifteen and a half, and those deficient by reason of debility are not kept for the service. It is ordered that any of the boys, after a year's duty on board a brig, may, if they volunteer, go to Haslar and receive training for nurses from the Sisters, and when found qualified become the nurses of hospitals and ships, and thus, in time, the entire sick-berth staff of the navy will be obtained from boys educated at the Greenwich Hospital School. The new system is to go into effect as soon as the requisite arrangements are completed at Haslar. The scheme will revolutionize the existing method of nurse supply, and no doubt seems to be entertained of its success.

The cost to the Government of a boy taken from the streets, educated at the Greenwich school, and on duty in the service until he becomes a seaman, is £500.

To carry out the recommendation of the committee that a limited staff of sisters be employed in certain hospitals, who, in addition to nursing duties, shall train the youths for the sick-berth staff, accommodations were being made for the reception of one head sister and nine sisters. They will be provided with a suitable number of chambers, a sitting-room, dining-room, kitchen, scullery, and bath room in a former ward and adjacent rooms in the medical block. Their apartments are separated from those of the young surgeons by an intervening occupied ward in the second story.

In an inspection of the surgical wards, in company with Drs. Dick and Reid, two new floors made of teak wood were noticeable on account of the glassy, impoisonable surface produced by rubbing down a coating of bees-wax and turpentine, which, with the excellence of the wood, gave a fine appearance. The cost of each floor was £100.

Time was afforded only for a brief visit to the Museums of Pathology and Natural History, and the library, all being worthy of commendation.

Conspicuously placed in the Pathological Museum is a marble bust of Sir John S. Pakington, on a granite pedestal, on which is inscribed :

"This bust of the Rt. Hon. Sir John S. Pakington, Bart., C. C. B., is placed in Haslar Hospital by the medical officers of the royal navy, to record their sense of the benefits conferred upon that dept. of H. M. service during the administration as first lord of the admiralty in 1858-9."

**GENERAL MEDICAL REPORT ON THE U. S. FISH COMMISSION
STEAMER ALBATROSS, FOR THE YEAR 1883.**

By C. G. HERNDON, PASSED ASSISTANT SURGEON, U. S. NAVY.

The U. S. Fish Commission steamer Albatross was built in 1882 by the Pusey and Jones Company of Wilmington, Del. She is constructed of iron; is 234 feet in length over all, 200 feet on a 12-foot water line, $27\frac{1}{2}$ feet beam (molded), $16\frac{1}{2}$ feet depth, net registered tonnage 384; displacement on 12-foot draught, which is her usual draught when ready for sea, 1,000 tons. She is built on the water-tight compartment principle, having six iron bulkheads, five of which are water-tight; these bulkheads divide her into seven compartments, six of which are water-tight. Each bulkhead has a small gate in it, thus allowing, when necessary, water communication between the different compartments. By means of bilge connections, each compartment can be pumped out independently. The ship is supplied with two independent sets of compound engines, which drive right and left handed four bladed screws, and propel her at a maximum speed of 12 knots. The ship is rigged as a brigantine. Upon the main deck is the cabin, deck-house, and pilot-house. The cabin is 38 feet in length, extends across the width of the ship, is $7\frac{1}{2}$ feet below decks, and has a cubic capacity of 2,233 feet; on starboard side forward is an office, abaft this a state-room; corresponding to these on port side is a pantry and state-room; each of these state-rooms has a cubic capacity of 580 feet. In each state-room is an 11-inch circular air-port. Between these apartments is a passage-way 5 feet wide. Abaft these is the main cabin. On each side of cabin are two circular air-ports, of same size as those in state-rooms. Cabin skylight is 6 by 5 feet. As in all other parts of ship, artificial light is furnished by the Edison incandescent system; heat is furnished by steam from main boilers, and ventilation by same apparatus as that in use in other parts of the ship. Between cabin and deck-house is a deck space the width of ship and 16 feet long. About center of this space is the ward-room skylight, 7 by 5 feet. The *deck-house*, the top of which forms the hurricane-deck, extends forward for 83 feet, is $13\frac{1}{2}$ feet wide, and $7\frac{1}{2}$ feet high. It is built of iron, sheathed with wood as far as the forward fire-room bulkhead. This method of construction serves to protect what may be termed the uncovered hatchways. Forward the fire-room the deck-house is of wood; any hatch in this part can be securely battened down should the necessity arise. In the after part of the deck-house is the stairway leading to the ward-room; forward of this is the engine-room, lighted and ventilated by a door in each side, and a window to a side; the windows in the deck-house are 20 by 26 inches. The engine-room hatch has a windsail, and is $6\frac{1}{2}$ by $4\frac{1}{2}$ feet.

Around the sides and after end of the engine-room is an iron gallery,

upon the forward port end of which is a Baird's distiller, capable of producing 2,000 gallons of water in twenty-four hours. Forward of the engine room and immediately over the starting gear of the main engines is the kitchen, which contains a large and improved galley. Next to galley is the upper boiler-room, and forward of this are four state-rooms, two on each side, which are the quarters for members of the Fish Commission. These rooms are exceedingly well lighted and ventilated, each one having a large door and window opening from the gangway. Above each door are a number of apertures communicating with the outside air, and in cold and stormy weather, when doors and windows are closed, there is ample ventilation through these. In addition to these, the longitudinal bulkhead dividing the house has in its upper part perforations of considerable size and number. Cubic capacity of each of these rooms is 306 feet. Next comes the upper laboratory, which has the same beam as the rest of the house, is $13\frac{1}{2}$ feet long, and has a cubic capacity of 1,249 feet. A hatchway leads from this to lower or main laboratory. In after end of upper laboratory is a large bookcase for a scientific library. To the right of library is a case for scientific instruments, and on opposite side are two large tanks, one for alcohol and one for sea-water. On the starboard side of the forward bulkhead is the medical case, the upper part of which has large glass doors, and contains the dispensing bottles, measures, balance, &c. The lower portion of the case is filled with drawers, sufficient in number and size to contain the admirable outfit of medical and surgical instruments with which the Bureau of Medicine and Surgery has supplied this ship, and medical stores for six months' use. Prof. S. F. Baird has supplied the medical department of the ship with a number of the latest standard works on various medical and surgical subjects. In the center of the room is a large table directly under the skylight, at which four persons can be seated at one time. Along the sides of the room are three folding tables. This apartment is admirably lighted and ventilated by means of one hatch $6\frac{1}{2}$ by 5 feet, two windows and one door on each side. Immediately below the upper laboratory is the lower or main laboratory, of larger size than the former, as it extends from side to side of the ship, which here has a beam of 26 feet. It is 20 feet long and $7\frac{1}{2}$ feet between decks. This apartment, as well as the laboratory store-room immediately below, is separated from the rest of the ship by iron water-tight bulkheads, an important matter, as hundreds of gallons of alcohol are kept in them. The after end of this room contains a table for chemical work, and drawers for the storage of chemical apparatus. In the early part of the cruise repeated efforts were made to eliminate the constituent gases of sea-water by means of Behren's apparatus; but the apparatus, when set up, was so easily disarranged by even slight motion of the ship that the attempt was finally given up. The water specimens are now sent for analysis to the Fish Commission laboratories at Washington, D. C., and Wood's Holl, Mass. The water to be preserved for analysis is brought up in the Sigsbee water-cup from various depths varying from a few fathoms to 2,747 fathoms, the greatest depth from which a specimen has yet been taken on board. As soon as the cup arrives at the surface its contents are poured into water specimen bottles, with ground-glass stoppers, and over these split skin is carefully tied. Before the specimen bottles are used they are carefully washed out with distilled water. Many specimens of sea-water from varying depths and from various localities are examined on board in order to note the changes in specific gravity of

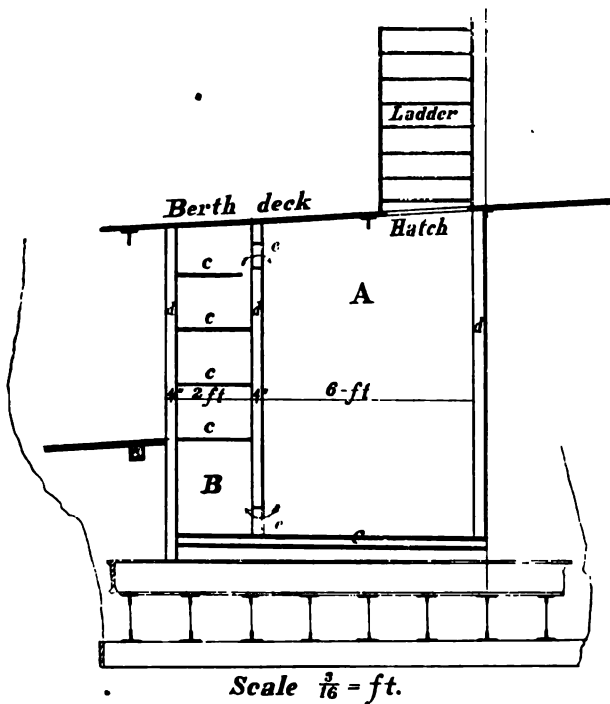
the water under different conditions. The following scheme illustrates the method of recording the examinations :

Date.	Station.	Depth.	Temperature of the water at this depth.	Temperature of the air.	Temperature of specimen at time specific gravity was taken.	Specific gravity.	Reduced to 60°.

At frequent intervals copies of the results of these examinations are forwarded to the Fish Commission laboratories. Hilgard's salinometer is the instrument used for determining the specific gravity. On the starboard side of the lower laboratory, aft, is a dark-room for the use of the photographer. On the port side, corresponding to this position, is a large sink supplied with running water, where specimens can be washed. Forward of the sink and dark-room are two long tables, where specimens can be sorted, dissected, &c.; the table on the port side, used by the ichthyologist, is of a convenient height for work while standing, that on the starboard side while seated. Each table is supplied with drawers, where instruments, towels, &c., can be kept. The forward bulkhead of lower laboratory is filled with compartment drawers for holding natural history specimen bottles. Below these drawers are spaces for eight boxes, which contain copper alcohol tanks, which hold 16 gallons. Laboratory store-room is just below. In this are kept large quantities of alcohol in tanks, natural history specimens ready for shipment, a large supply of specimen bottles ready for use, fishing-seines, scoop-nets, harpoons, &c. Forward of upper laboratory is the chart-room and pilot-house. On each side of deck-house is a gangway 6 feet wide. Forward of the pilot-house is the dredging engine, and beyond this a clear deck space in which is the berth-deck hatch. The forecastle is a high one, being 6 feet between decks. Under the forecastle on starboard side are closets for officers and bath-room for crew. On port side are closets for crew and lamp-room. The forecastle affords berths for fourteen of the crew. In cold and stormy weather at night a curtain is lowered from forecastle to main deck. Just below the berth-deck and forward of the forehold is a *cold-room and ice-house*.

The prime object in supplying the Albatross with these was to provide a place where fresh natural-history specimens could be stored and kept without undergoing putrefactive changes. When the cold-room is not in use for this purpose it can be used for the storage of fresh provisions, and has been so utilized during the past year. It is in this connection that I wish particularly to call attention to it, for it would be an easy matter to fit our naval vessels with similar compartments, and as new vessels for the Navy are now being constructed, and it seems not unlikely that more will soon follow, the present seems an opportune time to direct attention to the fact that in this ship these compartments have been in constant use for a year, and are now regarded by all as a practical success. The advantages resulting from the use of fresh food at sea need not be enumerated, and the benefits resulting from having a supply of ice on hand, not alone for dietetic purposes, but for use during the prevalence of many diseases, are equally recognized. The ice-house and cold-room are constructed to work on the cold-blast sys-

tem. The ice-house and cold-room have the following dimensions: The former is 6 feet and the latter 2 feet in the clear, fore and aft. Each is about 9 feet high, and extends across the entire width of the ship. The ice-house, marked A in the appended figure, is divided



by a midship longitudinal bulkhead, making in fact two independent compartments, each capable of holding from 3 to 4 tons, according to the care with which the packing is done. The bulkheads, top, sides, and bottom are double sheathed, and contain a 4-inch air space, which is filled with sawdust; they are lined on the inside with galvanized iron, and all joints are carefully soldered. A trap in each compartment drains all water into the bilge. The ice-houses are reached by hatches from the berth-deck. The cold-room B is immediately abaft the ice-house and communicates with it by apertures near the top and bottom of the after bulkhead of the ice-house, as shown by the arrows *e, e*. Gratings *c, c, c, c*, which are in sections, and can be easily removed and cleaned, are used as shelves on which the natural-history specimens or articles of food can be placed. The structure of the cold-room is precisely similar to that of the ice-house, except that the air-space is filled with hair-felt instead of sawdust. This space, just as in the ice house, is divided by a longitudinal bulkhead, thus allowing two independent compartments, each with its door in the after bulkhead. The air of the ice-house becomes chilled, falls to the bottom of the chamber, and precipitates its moisture, while the air in the cold-room, whose temperature is greater than that of the ice-house, and contains consequently more aqueous vapor, rises; thus a constant current is established between the chambers, and passes through the apertures marked by the arrows. That the air in the cold-room does take up and

remove moisture has been shown by the simple experiment of placing wet cloths on the gratings, and which on removal a few hours later were found to be comparatively dry. Fresh food for twenty-five persons for twenty days has been carried, and this quantity could be largely increased. When the ice-house is kept well filled, the temperature of the cold-room is about 40° F.

Berth-deck.—On the forward part of this deck are the magazine, brig, &c. This deck is 40 feet long, $7\frac{1}{2}$ feet between decks, and has a cubic capacity of 16,000 feet; it is laid with yellow-pine lumber which was thoroughly seasoned before it was put into the ship, and consequently its capacity for absorbing and retaining moisture for hours after washing down is limited; the rapidity with which the deck dries can be greatly increased by starting the blowers immediately after drying down, and observations have shown that in a short time after starting these, the atmospheric conditions of berth and spar deck are alike. During the past year this deck has not been wet on an average more than twice a week. On this deck forty-four of the crew swing, and all the men are messed; they are provided with swinging tables and with benches, which can in a very short time be stowed away; the comfort of the crew is immensely promoted by the substitution of tables and benches for mess-cloths. The deck is well lighted and ventilated by two hatches, the larger of which is $6\frac{1}{2}$ by $6\frac{1}{2}$ feet, and a smaller on $3\frac{1}{2}$ by $3\frac{1}{2}$ feet; by four air-ports on each side, circular in shape, and 9 inches in diameter, and by six registers for artificial ventilation. Two steam-pipes, running to and from anchor and reeling engines, pass through this deck; their presence is sometimes an advantage and sometimes not; in cold and wet weather they assist in keeping the deck dry and warm, but when the ship is at work in tropical climates they increase the temperature. The deck is supplied with two steam-heaters, and its average temperature is about 74° F. On the after part of this deck is the engine for reeling in the wire cable used in dredging operations.

The *steerage* is on the after part of the berth-deck; the apothecary, yeomen, and machinists live here. The steerage consists of a country $12\frac{1}{2}$ feet long and $7\frac{1}{2}$ feet between decks, and four state-rooms, two on a side; each state-room contains two bunks, one above the other; the bunks are 6 feet long. The cubic capacity of the steerage, country, and state-rooms is 2,184 feet. Each state-room has a circular air-port, 9 inches in diameter in the clear, and a register for artificial ventilation. The steam pipes for the anchor, dredging, and capstan engines pass through the steerage, and formerly made it very hot. This has been, to a very great degree, remedied by introducing through the main deck a 12-inch ventilator. The average temperature of these quarters prior to this, when steam was being used on forward engines, was 90° F., and the average now, under same conditions, is 80° F.

The *fire-room* is a very cool one, the average temperature during the year being only 90° F. The engine-room is cool, compared to many naval vessels; the hottest part is about the starting gear, which is just beneath the galley. The average temperature here for the year was 110° F.

The *ward-room* is 38 feet long and $7\frac{1}{2}$ feet between decks. It differs in plan from the usual ward-room in that forward of the state-rooms is a clear space, the entire width of the ship and $12\frac{1}{2}$ feet deep. Aft this space and on starboard side are three state-rooms and bath-room.

All bunks in this ship, except those in steerage, are $6\frac{1}{2}$ feet long. On port side are four state-rooms. Forward of ward-room, on starboard side, is the chief engineer's room, and on port side is the pantry, with

a large store-room beneath. Under ward-room country are the pay-master's and navigator's store-rooms. Over forward part of ward-room is a hatch 7 by 5 feet. In the country are six registers for artificial ventilation, three on a side, and four circular air-ports, 9 inches in diameter, two on each side. Every state-room contains a register for artificial ventilation and one of the circular 9-inch air-ports. The cubic space of the country, state-rooms, and pantry is 4,300 feet. The average size of the state-rooms is 360 cubic feet.

Heating.—All parts of the ship are fitted with radiators supplied with steam from the main boilers.

Ventilation.—Ventilation is effected in part by the natural entrance of air through air-ports, doors, windows, and hatches, and largely by artificial means. The artificial ventilation is effected on the aspiration system by means of a No. 6 Sturtevant exhaust fan, propelled by a Wise steam motor, which is a kind of rotary machine, patented and manufactured by Thomas Wise, of South Framingham, Mass. The motor is mounted on the fan-shaft without the intervention of any mechanism whatever. The plant is suspended from the under side of the main-deck beams in the boiler-room. The air-opening of the fan is circular, and has a diameter of 14 inches, which is the size of the main conduit. The two main branch conduits, one on each side of the ship, are 11 inches in diameter, and their branches, which run fore and aft the entire length of the ship, commence with a diameter of 9 inches, and diminish in size as they recede from the branch mains until a diameter of 3 inches is reached at the extremities of the hull. The registers are uniform in size, and have an opening of $2\frac{1}{2}$ inches. These openings are regulated by rotary covers on ground faces, whereby they are made air and water tight. The conduits are galvanized-iron spiral pipes, light, and strong enough to bear an internal pressure of 60 pounds. The pipe-joints are riveted and soldered. The system was designed to run at 1,018 revolutions per minute, and at that speed 251,500 cubic feet of air would have been exhausted from the ship, or a mean of 3,007 cubic feet per hour for each of the 75 persons on board. This, in actual practice, has not been realized, however, from lack of power in the motor driving the fan; in fact, not much more than half this volume has been reached. Notwithstanding this, the air in the inhabited parts of the ship is much better than it could possibly be without the artificial ventilation, and the comfort and health of all is thereby promoted. The vitiated air gathered from all parts of the ship is brought, by the system of pipes and conduits already described, to the upper part of the fire-room, where it is discharged with considerable force, and then mingles with the air entering the furnaces. Judging from my own experience during the past year, and from talking with various officers attached to the ship, I think there is but little doubt that the air between decks has been best, and every one has felt most benefit from the artificial ventilation, when the system has run continuously for hours at a time, thus preventing any accumulation of vitiated air than when it has been run spasmodically, even though a higher rate of speed was maintained for a short time.

Lighting.—The ship is lighted by the Edison incandescent system, using a Z dynamo of 51 volts pressure, and requires about six horsepower from a steam-engine. The current of electricity flows through carbon filaments in vacuo, of 69 ohms resistance in lamps, each of which gives a light equal to 8 candles' power. Some 16-candle lamps are now in use on board. The total number of lamps in the ship is 140. Each state-room is supplied with one. The lamps are mounted on brackets

and fixtures resembling gas-fixtures, and are lighted and extinguished by a key, which is much like the stop-cock on a gas jet. The lamps are guaranteed to last for 600 hours; many of those in this ship have been in use since the ship was commissioned, and have burned more hours than they were guaranteed to do. One of them has burned 1,590 hours; several have burned more than 1,200 hours, and the average life has been 592 burning hours. This average would have been greater, but for the fact that the deck-house is abundantly supplied with lights, many of which are in very exposed positions, and have been accidentally broken long before their burning life was completed. This system of lighting has been to us a source of great comfort, so great, indeed, that it can only be properly appreciated by those who have used flickering candles in state-rooms, and who also know the difficulty with which ships' lamps, as a rule, are kept in good order. In addition to having a brilliant and steady light, it must be remembered that these lamps do not consume any of the oxygen of the air in the quarters below decks, which are necessarily restricted in cubic capacity, but leave it all for purposes of respiration.

In building the ship and in fitting her out neither expense nor pains were spared to make her a comfortable home for officers and men, and experience during the past year has shown her to be a comfortable and healthy ship. During 1883 the ship has been engaged in deep-sea explorations along the Atlantic coast from Cape Hatteras, N. C., to Cape Sable, Nova Scotia. The following ports were visited, several of them more than once: Washington, D. C.; Wilmington, Del.; Norfolk, Va.; New York, N. Y.; Greenport (L. I.), N. Y.; Newport, R. I.; Wood's Holl, Mass.; New Bedford, Mass.; Portsmouth, N. H.; Provincetown, Mass.; Gloucester, Mass.; Baltimore, Md. During the year she has steamed 10,416 miles, and was under steam 327 days. She was under steam, at sea, 108 days; in port, 257 days. There were 83 admissions to the sick-list; of these 77 were discharged to duty; 6 were invalided to the Washington and Norfolk naval hospitals; of these, 3 returned to duty on board and 3 were discharged from the service in the hospitals. One hundred and thirty-seven recruits were examined; of these, 110 were accepted and 27 rejected. The average number of souls on board for the year has been 67; of these, 9 are commissioned officers. There are no marines or apprentice boys in the ship's company.

EXTRACT FROM THE REPORT OF MEDICAL INSPECTOR C. H. BURBANK, U. S. N., ATTACHED TO THE U. S. S. BROOKLYN, 1883.

The country of Zanzibar, really including two or three small islands near by, on the east coast of Africa, as well as the adjacent mainland, between the latitudes of about 2° north and 10° south, and extending inland an unknown distance, is governed by the Sultan of Zanzibar, whose power is absolute in the island and city of the latter name, where he has his palaces.

On the mainland there are many petty chiefs who pay him tribute, and some cities which recognize his authority over them in the same way, but further than that his power among them is slight. Zanzibar is an island of coral formation, being in many places but a few feet above high-water mark, and the greatest elevation of its surface is but a few hundred feet higher. It is about 30 miles long from north to south, and about 20 miles wide at its broadest part. In many parts the soil is rich with a tropical, luxuriant vegetation, including fruits, grains, and vegetables.

The mango is the most important among the fruits, serving as a food for the people to a very great extent, being delicious, wholesome, abundant, and cheap.

Many acres are covered with mango trees belonging to the Sultan, and the poor people are allowed to gather the fruit for food.

The principal food of the poorer classes is the starch prepared from the root of the manioc, belonging to the family of the Euphorbiaceæ.

The principal article of produce in the island for export is the clove, of which very large quantities are grown, being one of the greatest sources of revenue to the Government.

The stem of the clove, which was formerly thrown away, is now carefully saved and sent to the markets of the world, principally to the United States, to be ground and sold as "ground cloves."

A large trade in ivory is carried on, it being brought from the interior of Africa and shipped from this place to all parts of the world.

Cattle and sheep are raised in small numbers on the island, as well as fowls of various kinds, and vegetables in sufficient quantities, at fair prices, can be procured.

Good water has been brought into the city of Zanzibar in abundance from an adjacent hill.

The population of the city of Zanzibar is about eighty thousand, and it is said there are two hundred and fifty thousand free and slave persons in the whole country.

The climate of Zanzibar is not unpleasant, the temperature being moderate the year round, rarely going above 85° Fahr. in the hot season, from December to May, or below 75° Fahr. in the cooler season, from May or June to November, when the southeast monsoons are blowing almost constantly.

There are two rainy seasons, one about December and another in March, the most disagreeable parts of the year, as the northeast monsoon blows between these two months, and, although being from the

Equator, is cooling and agreeable as compared with the hot and rainy weather with no wind.

The drawback to the climate is that it is never cool enough to invigorate, and it is about as warm in the night as in the day, and a continued residence here, to a European, is very debilitating. The prevailing disease here is elephantiasis, which is very common, both among the lower and higher classes; among the latter I had an opportunity to see several cases. It is a belief among the people that the disease is caused by the drinking of so much cocoanut milk, and the leading physician here, who has lived here many years, expressed the same opinion.

The same belief exists among the people at Mozambique, where the habit and the disease are common.

Whatever the cause, it has its violent exacerbation of fever with most severe pain in the parts affected, which is expected to recur with quite as much regularity as that of ordinary malarial disease. The latter disease is frequent, but not more so than in many other tropical places.

Other zymotic diseases do not seem to be more common here than in other places similarly situated. Epidemic cholera has visited the city more than once; the last time but a few years ago, when the town was almost depopulated. It is the disease feared by the inhabitants, for the people live in squalor and filth, without any regard to sanitary laws. In the rural districts, malarial diseases are very prevalent and very fatal.

The city of Zanzibar, situated upon the west side of the island, is built upon a narrow peninsula (at high water an island) and is connected with the mainland by a bridge.

The greater part of the houses are low, mean buildings of stone, mud, and wood, in very different proportions and combinations, according to the inclination of the builder. The palaces of the Sultan and a few houses built by rich Arabs many years ago, are large and handsome. The latter are mostly occupied now by foreign merchants.

About the only new building is a palace for the Sultan, nearly completed. There is no regularity in the placing of the houses, and it can hardly be said that there is a street in the town, except one or two very short ones near the palace. Narrow and crooked lanes take the place of streets, through very few of which a carriage could pass. There is no general hospital or establishment of education, except those connected with the missions. I only heard of one European physician in the town, a Russian, who practices in the Sultan's family, but not among the people.

There is no medical history connected with the place and no medical statistics to be obtained. The higher classes are composed of Arabs, including the Sultan and his court, and the rich Arab and Hindu merchants. Among the lower classes are included poorer Arabs, negroes, free and slave, Madagascans, &c. The court language is Arab and that of the people is "Swahili," or native negro language of the island and the adjacent mainland. The customs of the people are wholly Eastern, their religion Mohammedan and heathen.

Mozambique is made up of the city of the same name, situated upon an island on the east coast of Africa, and a large territory upon the adjacent mainland, but a few miles distant, extending from about 10° to 26° south latitude and an indefinite distance inland. It is a Portuguese colony, having been in the possession of that Government for about four hundred years. The whole country is said to contain more than two millions of people. The city comprises the whole island, which is small, and has a population of about twelve thousand, con-

sisting of about five hundred Portuguese, a thousand other Europeans and Banians from India, and ten thousand negroes. The Government is semi-military, the governor being an army officer, with a force of four hundred men. There is a very large, old-fashioned fort at the outer end of the island, showing that the place was considered of importance in former days. The negroes all live by themselves at one end of the island, in huts made of grass and bamboo. The city proper, where the Europeans and Banians live, is well laid out in regular streets of good width. The houses are mostly one-story high, and made of coral, bricks, and adobe, presenting a comfortable and tidy appearance. The streets are clean, and many paved or macadamized with coral from the island.

The regulations as to public cleanliness are very strict, and no garbage is allowed to be deposited on any part of the island, but must be destroyed. Even in the negro quarter there is an appearance of neatness.

These sanitary regulations have been enforced but a few years, since the administration of the present governor. Formerly the refuse was thrown upon the beach and left subject to the influence of sea-water, rain, and a tropical sun.

The negro quarters were also allowed to be in a filthy condition, both inside and out of the huts, which were and are thickly crowded together.

The place has been subject to terrible epidemics of a disease called "pernicious fever," of a very fatal character, especially among the negroes. In November, 1879, there was such an epidemic, which was so fatal among the Europeans that twenty-four died, after being sick from one to five days, out of a population of five hundred. It was equally fatal among the negroes. The origin of the disease was considered malarial, caused by the breaking up of large quantities of the coral for building purposes and for making lime, and allowing it to be subjected to the rays of a tropical sun.

It is more probable that it was caused by the filth of the place, and especially among the negroes, so thickly crowded together and subjected to no sanitary regulations, where there was no drainage of any kind, and the ground being too low and too level to be washed by the rains.

There is no doubt that the place was formerly very "sickly," but I think it may be now said to be in a very good sanitary condition, taking into consideration its position in a very malarious climate and the crowded condition of its negro population, and their unwillingness to comply with any of the laws of civilized life, especially those of cleanliness and health.

The hot and rainy season extends from November to April.

A disease very much dreaded on this coast is the "Bilharzia disease," "endemic hæmaturia," "Egyptian chlorosis," "distoma disease," "hæmatozoal affection," &c. It causes discoloration of the urine, giving it the appearance as if mixed with blood, which is the diagnostic symptom of the disease, and is due to the presence of a small fluke in the blood. The name of the parasite is *Bilharzia hæmatobia*, which seems to have a similar origin and the same habits as the common liver fluke, *Fasciola hepatica*, called the tailed fluke, or *Cercaria*.

The disease not only attacks natives and foreigners long resident in the district affected, but is liable to show itself in any stranger who visits the country for a short period even, if he is exposed to the cause of infection.

It is said that cattle and sheep infect themselves with this or a similar parasite (*Bilharzia*), as it is known they do with the common liver fluke (*Cercaria*), by swallowing the larvæ.

A disease called red water in cattle is supposed to be due to this fluke. The larvæ of this parasite reside in small fresh-water mollusks, like those of the common fluke, and they also swim about in the water at certain periods of their lifetime, and are liable to be swallowed in drinking. In a district where this disease exists, water for drinking should never be taken from stagnant or shallow pools or from tanks which may be contaminated. Boiling or proper filtering will make the water safe, if taken from a doubtful source. Bathing in stagnant water is also said to be dangerous, as the parasite may penetrate the skin and develop there.

The disease is serious and fatal, but I could learn little more about its course than what is known of parasitic diseases generally, except the discolored urine, which, as I have said, is diagnostic.

There is a fine, large hospital here, "Hospital Militar e Civil de Moçambique," built by and under the control of the colonial government. It is not yet finished, but the work is still going on. A large part of it is now occupied, and it seems to be well conducted under the charge of Government officials.

The harbor of Mozambique is not large, but the anchorage is safe, as it is protected from the sea by coral reefs, leaving two good entrances to the bay. Good beef can be obtained at a fair price, but vegetables and fruit are scarce and high. Water from the shore should not be used if it is possible to avoid it, for it is all collected from roofs into tanks, where it may have remained a long time and become foul or possibly infected with the larvæ of the parasite *Bilharzia hæmatobia*, the drinking of which might cause serious disease. All the sanitary regulations necessary to be observed in tropical and malarious climates should be particularly enforced at this place, as the direct rays of the sun are burning at midday, and the air is filled with malarious poison at night on shore, but of course less on board ship, anchored a good distance from the beach, near the outer end of the island and farthest away from the most malarious part of the place.

**EXTRACTS FROM THE REPORT OF SURGEON H. N. BEAUMONT,
U. S. N., ATTACHED TO THE U. S. S. ENTERPRISE, 1883.**

The Enterprise is a wooden, single decked, bark-rigged, screw steamer, of 615 tons burden, having a displacement of 1,375 tons. She has compound engines, with six boilers and twelve furnaces, and carries a battery of six guns.

The complement is 16 officers and 178 men. This vessel has a poop-cabin, which is lighted and aired by two skylights, two gun-ports in the after and two in the forward cabin, and two circular dead-lights in the sides. In addition two doors, one on either side, communicate with the quarter deck, and seven windows arranged with sliding blinds pierce the forward bulkhead, by which means an unlimited amount of light and air can be admitted at all times.

The ward-room contains an air space of 3,249 cubic feet, including ten state-rooms, and is occupied by ten persons, allowing about 324 cubic feet to each. The light and air is furnished by two skylights having a combined superficial area of 46 square feet, and ten air ports, five on each side, having a combined area of 6.5 square feet. There is also a ventilating shaft leading from the pantry in the after part of the wardroom, passing up through the cabin to the poop-deck, which is about 2 feet 4 inches by 1 foot 2 inches, through which a current of air is passing, more or less, at all times. While in port, with the dead-lights open, the ventilation is above the average; but at sea, when the lights are closed, it is rather confined—especially in the state-rooms and after part of the ward-room. It is unfortunate that the dead-lights are constructed so near the water-line that they can only be opened during the mildest weather, and frequently they are obliged to be kept closed in port, in consequence of a little roughness or the swashing of the water by small boats or lighters alongside.

The lighting of the ward-room, from the unusually large skylights, is excellent, but in the after state-rooms reading and writing is only possible with artificial light, excepting on very bright days.

The steerage includes all the space between the ward-room and engine-room, bulkheads and the sides of the ship, there being no staterooms, and is occupied by six persons.

Transoms are arranged along each side, affording berthing space for four persons, the others being accommodated with hooks for swinging hammocks. The total air space, deducting pantry and store-room, two transoms, two bureaus, and other obstructions, is about 2,269 cubic feet, allowing about 376 cubic feet for each individual.

The lighting and ventilation is admitted from a large central hatch, having a superficial area of 27.6 square feet, which is also the common passage from the ward-room and steerage to the spar-deck. Four air ports, two on each side, also supply light and ventilation, although, as in all other parts of the ship, they are so near the water-line that it is seldom they can be allowed to remain open, even in harbor. The ventilation of the steerage is also improved while under steam or sail by means of a current of air through the lattice or open work of the engine-

room door, communicating with the steerage, the air passing from the latter to supply that rarefied by the heat of the fire-room. Ordinarily the air of the steerage is very pure, and only when, during wet and cold weather, the ports are closed and the hatch hooded is it very seriously contaminated.

The berth-deck, extending from the fire-room bulkhead aft to that of the sick-bay forward, contains 9,009 cubic feet of air space, and is occupied by 110 men, allowing about 82 cubic feet per man. In this calculation of the air space of the berth-deck no deduction has been made for mess chests, bags, ditty-boxes, or other movables. The air and light is admitted by the main and forward hatches, the former having a superficial area of 25.5 square feet, the latter about 22 square feet. In addition to these, light and air is admitted directly by ten air ports, five on either side, having a combined area of 66 square feet; indirectly by two other ports, one in the dispensary and the other in the pay office. Since leaving the United States the ventilation of this deck has been improved by the construction of two sheet-iron ventilators, which have been fitted to the coal chutes, one on each side, opening on the berth-deck just in advance of the fire-room bulkhead. These ventilators extend about 3 feet above the spar-deck, and are furnished with cowls, in order to keep out the rain. Notwithstanding these means for the admission of light and air the ventilation of the berth-deck cannot be said to be good, excepting in port, and then only when the dead-lights are open. At sea, with the ports closed, and especially at night, when the hammocks are occupied, the atmosphere becomes quite foul.

The fore-castle contains 4,339 cubic feet of air space, and is occupied by fifty-four men, allowing about 83 cubic feet per man. Excepting in very bad or extremely cold weather, when it is shut off from the spar-deck by means of a canvas screen, the ventilation is quite good. It is lighted and ventilated by means of the usual hatch opening through the top-gallant fore-castle, having an area of a little more than 8 square feet, and by means of 4 gun-ports. As the latter are always closed at sea, very little ventilation is obtained from them, excepting in port. The sick-bay occupies the usual space forward on the berth-deck, being separated from the latter by a bulkhead, the upper part of which is open work, admitting of a free interchange of the air.

Light is admitted by a spar-deck hatch under the top-gallant fore-castle, having an area of about 5 square feet. This hatch is on a line with the one immediately above, opening through the top-gallant fore-castle. During the summer season ventilation of the bay is materially improved by means of a wind-sail, which enters it through these hatches. Two dead-lights, one on either side, complete the means of ventilation and light, which may be said to be good. Provision has been made for seven sick, there being that many hooks for hammocks or cots; but owing to the angularity of the space, and the projection of the deck knees and stanchions, and the situation of the hatch in the middle of the space, not more than four can be berthed without inconvenience.

The proximity of the sick-bay to the fore-castle, where the crew congregate during all hours, the noises of the carpenters and coopers, the rumbling occasioned by the chains in weighing or dropping anchor, the ship's bell, and in addition the heat and vapor from the steam capstan engine, situated just abaft the sick-bay bulkhead, render its locality the worst that could be selected for the treatment of the sick.

The dispensary is a small room, containing about 175 cubic feet of air space, situated aft on the starboard side of the berth-deck, against

the fire-room bulkhead, and is separated from the fire-room by a broad partition about $1\frac{1}{2}$ inches in thickness.

Abaft this partition, about 3 feet, are situated the boilers. The extreme heat occasioned by this proximity renders it impossible to preserve many of the medicines, which are required to be kept at hand there for dispensing purposes, while the articles and packages kept in the drawers of the dispensing stand become useless in consequence of a thorough coating and admixture of coal dust. These remarks pertain also to the pay office, which is a room of about equal dimensions, containing about 175 cubic feet of air space, similarly situated on the port side.

The fore passage contains seven store-rooms and the sail-room. It is imperfectly lighted and aired through the forward berth-deck hatch and the one opening from the sick-bay. There is no ventilation excepting when the wind-sail is set, and artificial light is necessary at all times.

The engine-room is lighted and ventilated by a hatch 7 by 6 feet over which is fitted an iron grating. The ventilation is at all times excellent. The fire-room is covered by a hatch running its entire length, with the exception of the space occupied by the smoke-stack and base plate, which divide it about the center. The forward and after portions of the hatch, through which air is admitted, is covered with a grating similar to that over the engine-room. The portion abaft the smoke-stack has a superficial area of about 24 square feet, the forward portion having about 21 square feet. In addition, three sheet-iron ventilators, 18 inches in diameter, two abaft and one forward of the smoke-stack, extend through the grating within about 8 feet of the fire-room floor, projecting several feet above the hatch and having adjustable cowls. The light and ventilation is very good, and equals that of any vessel of the same class.

The shaft alley is well ventilated, and is generally sweet and pure. In addition to the current of air produced by the heat of the fire-room, when the fires are lighted, a copper ventilating tube, about 6 feet 6 inches square, communicating with its extreme after part, passes up the cabin to the poop deck, through which there is a current of air passing at all times. The brig is a rectangular cell, built around the foremast, on the berth deck, having an air space of about 249 cubic feet, not deducting the cubic contents of the mast. Very imperfect ventilation was originally afforded through about 161 holes, about $\frac{1}{2}$ to $\frac{3}{8}$ inch in diameter, perforating two sheet-iron plates, about a foot square, inserted in the forward bulkhead. It being thought that serious results might attend the confinement of prisoners in this confined space, and especially during a state of intoxication, the solid panels of the upper third of the door leading thereto were removed and replaced with open or lattice work, which has materially improved the ventilation.

**EXTRACTS FROM THE REPORT OF SURGEON M. L. RUTH, U. S. N.,
ATTACHED TO THE U. S. S. ESSEX, 1883.**

Subsequent to the inspection by the rear-admiral commanding the Asiatic station, the fleet surgeon was instructed to report means for the improvement of the ventilation of the berth-deck of this vessel.

The after part of the berth-deck is a veritable "black hole," and it is marvelous that the men berthed there enjoy as much health as they do. The condition of affairs mentioned is manifestly prejudicial and should be remedied as soon as possible.

Corea is probably the most interesting of the countries visited during the year. The ship was at anchor off Chimulpo, the sea-port of Séoul, the capital, during a portion of the month of September. The bracing air and genial climate was a relief after the long period passed in the tropics.

The Coreans are a large, well-fed people. Although living in hovels, and surrounded on every side by all kinds of abomination, they seem to be strong and healthy.

Their close physical similarity to the Chinese leads to the inference that they are of one and the same race, and, doubtless, when the country is more fully explored, it will be found that Chinese habits and customs essentially prevail.

The opportunity of obtaining medical information was limited, but from observation of them as seen by the roadside or en route to Séoul, the inhabitants seemed to be particularly free from chronic disease. Beggars were few; there were numerous blind, but these seemed well cared for and prosperous; their infirmity, it seems, being a source of profit to them, as they have the monopoly of certain callings.

Of the flora and fauna, the Smithsonian Institution will shortly be advised, as one of its agents was busily at work securing specimens.

**EXTRACTS FROM THE REPORT OF SURGEON W. A. CORWIN, U. S. N.,
ATTACHED TO THE U. S. S. FRANKLIN, 1883.**

The following changes have been made in the ship during the past year, which changes are important from a sanitary point of view: The old-fashioned circular air-ports extending around the vessel have been replaced by square air-ports of much greater area. These are hinged by the upper edge, and open outward, being stayed by stout brass rods, which hook into a staple when it is desired to securely close the port. The surface area of these ports will be given in connection with the ventilation of the berth-deck.

A second important change is the enlargement of the ward-room state-rooms by the removal inboard of the bulkheads which separate them from the "country." This change has increased the size of the rooms at the expense of the ward-room country, a very desirable thing, even in a vessel permanently stationed in port, and which would be doubly so in a cruising ship. A mess, as a whole, can well afford to sacrifice a little space to increase the health and comfort of its members individually, and on shipboard health, comfort, and roomy quarters are almost convertible terms. A third change consists in the enlargement of the sick-bay, by the removal of the bulkhead 5 feet 7 inches further aft, the construction of a commodious bath-room on the port side of the bay, and a dispensary on the starboard side.

The ventilation and comfort of the cabins have been greatly increased by the conversion of the propeller well into an inclosure containing a stairway from gun to spar deck cabin. This feature will be described farther on.

The following measurements have just been completed, showing the capacity in cubic feet of the various decks and apartments of the ship. These figures are subject to many and great fluctuations, varying with the amount of incumbrances which from time to time may be placed upon the decks and in the rooms. They are, of course, of no value as showing cubic air space when the ship is equipped and manned for sea service.

Spar-deck cabin:	Cubic feet.
Air space of country	3, 590.37
Air space of port state-room	748.41
Air space of starboard state-room	759.84
Total	5, 098.62
Gun-deck cabin:	
Air space of country	4, 984.53
Air space of port state-room	859.60
Air space of starboard state-room	876.47
Total	6, 714.60
Ward-room:	
Air space of country	5, 503.75
Air space of state-rooms (16)	5, 951.26
Total	11, 455.01

Steerage:	Cubic feet.
Air space of country	2, 209.26
Air space of starboard	1, 392.31
Total	3, 601.57

(No port steerage.)

Warrant officers' rooms (2), air space	300.93
Berth-deck, from steerage country to sick-bay	32, 886.04
Gun-deck, from cabin to bowsprit step	62, 240.40
Sick-bay, air space	4, 024.13
Examination room, air space	1, 149.54
Cell, air space	413.46

The spar-deck cabin is a commodious, well-lighted, and well-ventilated apartment, measuring 6 feet 10 inches between decks. Light and air are admitted by the following passages:

	Square feet.
2 doors opening upon quarter-deck (each 25 by 71.5 inches), aggregating	24.82
1 door into propeller well (27.5 by 71.5 inches)	13.65
2 stern windows (each 43.5 by 32.5 inches), aggregating	19.63
2 windows, one in each state-room (each 33 by 29.5 inches)	13.52
2 windows, one in bath-room, starboard side; the other in W. C., port side; (each 25 by 12.5 inches)	4.39
4 doors opening into state-rooms (two each 26 by 71.5 inches; two each 24.5 by 71.5 inches); aggregate of all	50.14
2 doors opening into toilet-rooms (each 27 by 71.5 inches)	26.81
1 skylight, area of aperture	22.67

These figures give a total of ventilation aperture, 175.58 square feet. Of this, 98.63 square feet represent the area of direct ventilation between the cabin and the external air. The remainder is the area of the doors connecting the various rooms. The forward cabin bulkhead is double, a temporary bulkhead having been built under break of poop for protection against drafts.

The gun-deck cabin, somewhat larger, is slightly higher between decks (height, 6 feet 11 inches). It is directly under the spar-deck cabin. Its apartments connect with each other and with the external air, as follows:

	Square feet.
2 doors, opening on gun-deck (each 29.5 by 67 inches) aggregating	27.44
2 doors, into state-rooms (each 27.25 by 67 inches)	25.35
2 doors, into state-rooms (each 23.25 by 67 inches)	21.63
1 door into pantry (23.25 by 67 inches)	10.81
1 door into propeller well (26.25 by 67 inches)	12.21
1 door, into W. C. off port state-room (29.75 by 37.65 inches)	7.80
4 windows, stern (each 35 by 37 inches) aggregate	50.35
2 windows, one each state-room (each 35 by 37 inches)	17.98
1 skylight (hatch) (60.5 by 52 inches)	21.44

Total area of communication with external air and the different apartments equals 185.41 square feet. Of this 119.82 square feet represent the total area of apertures connecting with outer air. The most important element in the ventilation of the cabins is, doubtless, the transformation of the former propeller well into a spiral staircase connecting the cabins. By these changes the space has been converted into an apartment having an area of 46.81 square feet, and extending from gun-deck cabin to poop-deck. It is surmounted by a skylight of same area, 46.81 square feet, which, when open, ventilates both cabins, or either cabin at will. The process can be much aided by the warm-air current from a steam radiator, placed beside the staircase, in the apartment. I know of no more effective way of thoroughly renovating the air of these rooms than by the exhaust of this upward warm-air current. Warmth is supplied to the cabins by steam radiators, two in each cabin. This method

of heating, which, from the difficulty of regulating it, and its desiccating qualities, may be regarded as objectionable in dwellings, seems to be, on account of its dryness, especially valuable for use in ships, where the humidity of the air of the various decks and apartments is apt to be great. Some observations made by the writer a few years ago, while residing in quarters heated by steam, frequently showed a difference of as high as 12° F. between the dry and wet bulbs, with the dry bulb at or about 72°. All efforts to lessen this extreme dryness of the air by evaporating pans on the heaters, or by steam jet were futile, as judged by the effects upon the hygrometer, although the atmosphere was so laden with steam, that it condensed on the windows. The lighting of the cabins is by the usual hanging lamps, burning kerosene oil. The cabins are furnished with closets and bath.

The ward-room is large and fairly well lighted, considering its situation below two decks. The amount of light and air has been much increased since the introduction of the square air ports. There are sixteen state-rooms, eight upon each side. The largest of these rooms (not taking into consideration the first room on the port side, which is disproportionately large) contains 420.39 cubic feet, making all deductions. The smallest contains, less incumbrances, 321.23 cubic feet. This gain in state-room space has been effected by moving the bulkheads inboard, as before stated. The ward-room is warmed by two steam radiators and lighted by a large hanging lamp. Considering the subject of ventilation, the ward-room country and the state-rooms may be regarded as one apartment, the state-room doors being rarely closed. The following exhibit shows the various hatches, doors, &c., controlling the ventilation of the ward-room:

	Square feet.
1 hatch, opening upon gun-deck (8 feet 6 inches by 4 feet 6 inches).....	38.25
1 hatch, opening upon gun-deck (8 feet 6 inches by 4 feet 7 inches)....	38.95
1 hatch, opening upon gun-deck (4 feet 11 inches by 5 feet 1 inch).....	24.99
1 ventilator, cylindrical (diameter, 16.75 inches), area.....	1.53
18 air ports (each 15.5 inches by 16.5 inches), aggregate.....	31.96
2 doors to steerage country (each 32.5 inches by 65.5 inches).....	29.56

Total area of various openings.....	165.24
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Of this, 33.49 square feet represent the area of communication with outer air. The steerage country calls for no special remark. The steerage hatch directly over it (5 feet 7 inches by 8 feet 1½ inches), 45.36 square feet, and is the passage way for steerage and ward-room officers. The starboard steerage is used at present as a mess-room for the warrant officers. It is a fine room, having no incumbrances except articles of furniture. It is ventilated by two doors into steerage country (each 27.5 inches by 65.75 inches), 25.10 square feet, and three air ports (each 16.5 inches by 16.5 inches) aggregating 5.32 square feet. The apartment is warmed by a radiator.

The berth-deck, as in other vessels of this class, is spacious, containing 32,886.04 cubic feet air space, all deductions made. This includes general berth-deck from fire-room bulkhead to sick-bay bulkhead, and the gangways on port and starboard sides, from steerage country to forward fire-room bulkhead, and the large spaces amidships between these gangways and just below the hatches. The deck is generally dry, being washed down once a week with hot water and at once dried. It is ventilated by hatches overhead, aggregating 286.36 square feet, in which is included engine-room hatch, through which the air of the berth-deck passes by the numerous small windows, piercing the bulkhead on berth deck surrounding engine-room. The above enumeration also includes the steerage

hatch, the steerage country being continuous with berth-deck space. In addition to the hatches mentioned, there are eighteen air-ports opening directly upon deck, aggregating 31.92 square feet. Total area of air passages is 318.28 square feet. This does not include the numerous air ports opening into the different apartments upon this deck. The deck is warmed by five radiators and lighted by five lamps, burning mineral or lard oil.

The gun-deck contains, all deductions and additions made, 62,240.40 cubic feet air space. This is made to include the space inclosed in the houses built over certain hatches, which space is continuous with the general gun-deck space, through the open hatches. The measurements were made from cabin bulkhead to bowsprit step. The deck is ventilated overhead by hatches, aggregating 716.40 square feet; and estimating the gun-ports as means of ventilation, 289.25 square feet additional must be included, making a total of 1,005.65 square feet area of all air passages.

The deck is washed down once a week. It is lighted by six "standing" lights, burning mineral and lard oil. There are no radiators upon this deck, excepting those in apartments. The deck is, however, maintained at a comfortable temperature by the warmth of the berth-deck and the fire-room, and during the day, especially, the warmth from the two galleys.

The sick-bay, situated on the forward part of berth-deck, contains 4,024.13 cubic feet air space, making all deductions and additions.

The old bulkhead was moved 5 feet 7 inches farther aft, and a forward bulkhead was built across the bay in the eyes of the ship, the space forward of it making an excellent store-room for the medical department. On each side of the bay an apartment was built, well lighted and convenient, that on the starboard side being fitted as a dispensary, that on the port side as a bath-room and closet. These rooms were so built as to pass through the sick-bay bulkhead, half of each apartment being on the berth-deck, and half within the bay.

The sick-bay is ventilated by four square air ports opening directly into the apartment, aggregating 7.10 square feet. In addition there are four other ports in the dispensary and bath-room, which however, do not directly influence the ventilation of the bay. A hatch overhead, gives an area of 20.43 square feet, and two doors, 30.01 square feet, making a total of 57.54 square feet. It is warmed by two radiators and lighted by one "standing" light. A second hatch, through spar deck, and directly over sick-bay hatch, gives a good supply of light to the bay. The deck in the sick-bay is painted and shellacked.

The room for physical examination of recruits is upon the gun deck, port side, aft. It is fairly well adapted to the purpose, but would be improved by a little additional width. Its dimensions are, length, 25 feet 1½ inches; width, 7 feet; height, between decks, 7 feet 2 inches. Its cubical contents, corrections made, are 1,149.54 feet. The room is furnished with the necessary apparatus, is warmed by a radiator and is lighted and ventilated by two gun port windows, and two doors. The deck, in this room is painted and shellacked.

The water used on board is obtained by distillation. Until last September, water was procured from the shore. The water now in use is of excellent quality. Distillation is done twice a week, ordinarily, and from 800 to 900 gallons are obtained each time; the average daily consumption by the ship's company is 400 gallons. Tank capacity of the ship is 18,000 gallons, but of the fourteen tanks, eight holding 1,500 gal-

lons each are leaky ; the remaining six, in good order, hold 1,000 gallons each.

A large number of the crew having their homes in Portsmouth or Norfolk, have their meals sent to them from the shore, and do not draw their ration in kind. The food is plentiful and of good quality. A new galley of the largest size has recently been put into the ship, and the facilities for cooking are of the best.

**REPORT OF PASSED ASSISTANT SURGEON W. S. DIXON, U. S. N.,
ATTACHED TO THE U. S. S. HARTFORD, 1883.**

Although certain recommendations were made in the sanitary report of this vessel at the end of the year 1882, I deem certain features of sufficient importance to be again adverted to.

The location of the sick-bay is inappropriate. Its proximity to the fire-room might not only be proper, but desirable, were this vessel cruising in cold latitudes, but in tropical regions it is often necessary to place those who are very sick elsewhere. Its three air ports cannot always be kept open at sea, and the nearest hatch is distant 24 feet from sick-bay door. A coal chute, passing through sick-bay and communicating with spar-deck, might be utilized for ventilation, but is closed against such an office at present. It, nevertheless, permits coal-dust to escape in great volumes every time coal is received on board. I believe the sick-bay would better serve its purposes if it were placed immediately forward of the dispensary and a canvas screen substituted for bulkhead. No encroachment upon berth-deck would thereby be made, and the location indicated would bring it opposite a large hatch. The berthing space made available would equal that for which exchanged. The sick-bay narrows very materially the passage way on the port side of berth-deck, and its removal would permit a free movement of air fore and aft—not a small desideratum, when the foulness of the air at night in the space abaft the “bay” is considered.

The ventilating apparatus has been rarely operated. A small boiler, placed on board at Boston (August, 1882) to be used in connection with apparatus, through unsuitableness, has not been put in position. Occasionally, when water is being distilled, or ship is under steam, the fans have been put in motion, and the beneficial influences wrought prove that the appliance should be more frequently used.

Without an opportunity of comparing the relative value of ventilation by extraction and propulsion—both means capable of being employed—an expression of opinion would be valueless; but, if propulsion be used at all, the tubes communicating with external air should not be placed directly over fire-room hatch.

The amount of organic matter in the atmosphere of the berth-deck is, at times, sufficiently great to be appreciated by the olfactory sense. Such is the case ordinarily when the hammocks are below, and then, occasionally, the odor is sickening. It would be interesting to know the state of vitiation, and, to elucidate that point, the subjoined data were procured. All the observations were made in the sick-bay, that being the only place where the scheme could be conveniently carried out, between the hours of 7 o'clock and 11 o'clock p. m. Some of the modifying environments were also recorded. The data may be of little value, because of the failure to indicate *all* the modifying influences, to make microscopic examinations and to compare with condition of external air. Twice was the “bay” free from odor, and the observations proved the presence of a small amount, comparatively, of organic material, but disclosed a large amount of carbon-dioxide; therefore,

there are modifying agencies too subtle to detect. The air was taken from a point two feet from spar-deck beams, and drawn through a succession of wash-bottles containing ammonia free water (redistilled). Capacity of aspirator, 30,000 c. c.

The vessel being at sea at each observation, and the weather warm, not half the crew were below at any time.

Number of observation.	Milligrams, per cubic meter.		Carbon-dioxide per 1,000 volume of air.	Temperature of berth-deck.	Humidity of berth-deck.	Temperature of spar-deck.	Number sick in bay.	Remarks.
	Free NH_3 .	Albuminoid, NH_3 .						
1	.4738	.990	.....	79	75	75	5	Under sail. Air ports not open during day. Light wind.
2	.180	.270	.531	82	76	76	5	Under sail. Air ports open during day, but closed 5 hours prior to observation. Strong wind.
3	1.679	.720	1.810	80	67	75	6	Under sail. Air ports not open during day. Much smoke from forge on berth-deck during day. Gentle breeze.
4	.229	.315	.910	80	80	76	3	Under sail. Air ports open during day, but closed 5 hours prior to observation. Light breeze.
5	.126	.360	.....	82	68	77	0	Under sail. Sick-bay undergoing thorough cleansing, painting, &c. Air ports open during day. Moderate breeze.
6	.090	.180	1.206	83	72	78	0	
7	.....	1.520	1.080	80	56	74	7	Air ports not open during day. Moderate breeze.
8	.964	1.620	1.740	80	67	75	7	Under sail. Air ports not open during day. Light breeze.
9	.990	1.206	.897	80	67	75	7	Under sail. Air ports not open during day. Light breeze.
10	.135	.630	.....	80	80	78	3	Under sail. Air ports open during day, but closed 5 hours prior to observation. Moderate breeze.
11	.126	.450	1.261	82	72	78	3	Under sail. Air ports open during day, but closed 5 hours prior to observation. Distilling. Gentle breeze.
12	.234	.540	1.349	82	76	79	3	Under sail. Air ports open during day, but closed 5 hours prior to observation. Quit distilling and fires hauled 1 hour prior to observation. Cloudy; gentle breeze.
13	.270	1.080	1.253	83	76	78	3	Under steam. Air ports open during day, but closed 5 hours prior to observation. Ventilating fans driven slowly for 2 hours prior to observation. Gentle breeze.

I am inclined to believe that the organic matter, which is in solid as well as vaporous form, bears a more nearly constant ratio to the respirability of air than does carbon-dioxide. Measuring by both, however, would seem to yield the fact that the air of the berth-deck is foul nearly every night this vessel is at sea. Instead, therefore, of removing ventilating apparatus, and gaining thereby a few cubic meters of air space, as has been suggested, it would be incalculably better to make it possible to use the appliance frequently.

The water used for domestic purposes on the Pacific coast of South America is not only relatively bad, but in some places absolutely so, and its reception on board our war vessels should be a matter not left to individual discretion, but positively forbidden by the Department. The substitution of distilled for shore water on the East Indies station, several years ago, was attended by results too familiar to be quoted. As all our steam vessels are supplied with distilling apparatus, and water of absolute purity can be made at about the cost of shore water, the

question of economy need not be considered. Only once has shore water been received during the year, I believe, for drinking purposes, and then an outbreak, approaching epidemicity, of diarrhœa, occurred. Several times, however, it was procured for purposes other than cooking and drinking, and the extreme facility with which it polluted the distilled water I will presently show.

The following is the record of several partial analyses of water made during the year, a complete examination not being deemed necessary:

[In parts per million.]

Ports.	Chlorine.	Free ammonia.	Albuminoid-ammonia.
Honolulu, H. I.	40	.04	.22
Panama, U. S. C. (Taboga)	43	.08	.20
Valparaiso, Chili	94	.04	.14

Medical authorities are positive that an undue proportion of organic filth, even assuming the absence of specific matter, is deleterious to health. Therefore, too much care cannot be exercised in keeping drinking-water pure, and to use any tank, pump, or other appliance for both potable and impure water is attended with risk, and should not be permitted under any circumstances.

At Callao, Peru, water was received, and its bad reputé led afterwards to a careful examination. The result was startling, as the following exhibit will prove:

	Parts per million.
Chlorine	55
Free ammonia .....	.026
Albuminoid-ammonia	2.14

The sample was very turbid, gray in color, and contained a great deal of flocculent *débris*. Allowing twenty-four hours for subsidence of suspended matter, another examination revealed a change in the albuminoid-ammonia, which had been reduced to .69 parts per million.

The small exhibit of free ammonia, the not excessive showing of chlorine, but the enormous proportion of albuminoid-ammonia would seem to indicate vegetable contamination. Such water is regarded as prejudicial to health. By comparison with waters recognized as filthy, an idea of the relative value of the Callao sample may be obtained. I am constrained to believe that the sample was exceptionally dirty.

[In parts per million.]

Source.	Free ammonia.	Albuminoid-ammonia.
Thames River (at London Bridge)	1.02	.50
Sewage effluent	16.20	.90
Callao sample (River Rimac) .....	.026	2.14

Impure water, in the etiology of diseases, especially those of the zymotic group, ranks very high; and while it may be used for an indefinite period of time without apparent harm, yet it is an unwise practice, and the risks in so doing ought not be taken unless there be no escape by reason of an absolute necessity. If it be required to take shore water for washing and steam-launch purposes, then tanks, pump, and

hose, for use only with such water, should be supplied. When the same appliances are used with the two kinds of water the distilled is inevitably contaminated. That fact was demonstrated very conclusively at Valparaiso. Shore water, examined and rejected, the following being the partial analysis—

	Parts per million.
Chlorine	94
Free ammonia .....	.04
Albuminoid-ammonia .....	.14

was taken for purposes other than drinking, and two days afterwards the water in the scuttle-butt, supposed to be distilled, was found contaminated to the following extent:

	Parts per million.
Chlorine	36
Free ammonia	Trace.
Albuminoid-ammonia .....	.14

To insure that no error had been made, the distilled water in the tank from which the scuttle-butt received its supply was examined and found absolutely free from chlorine and organic nitrogenous matter.

Subsequently, shore water was taken again for washing and steam-launch purposes, and gave another evidence of the facility with which drinking-water may be polluted and the danger incurred by using the water tanks for any other than their legitimate purposes.

A few days after the reception of the last mentioned water, and sufficient time had elapsed for general soiling of water utensils, an analysis of several samples was made, with a yielding of the following results:

[In parts per million.]

	Chlorine.	Free ammonia.	Albuminoid-ammonia.
Water in tank (distilled)	2	0	.06
Water issued to cabin	14	Trace.	.34

Other analyses were made but not considered necessary to record. The history of the water issued to cabin I could not satisfactorily learn, but infer it was shore water.

The presence of even such a small amount of chlorine as 40 or 50 parts per million causes the rejection of water for drinking purposes, and, excepting to the sanitarian, the value of such a find is not appreciated. It is surpassing strange to many that sodium chloride may be taken harmlessly in soup, &c., without stint, and yet an almost infinitesimal amount in water is sufficient to stamp it a forbidden or dangerous article to use. Such require a physiological test, but the introduction of enteric fever, or any other preventable disease, should not come within the range, even, of a possibility.

It may be contended that of the examples herein given of distilled water contaminated by dirty shore water there is only one to be regarded as possibly improper to use, yet I do not think the claim assumed, that not any water excepting that absolutely pure should ever be put in the tanks, is based upon trivial grounds.

**EXTRACTS FROM THE REPORT OF SURGEON J. W. ROSS, U. S. N.,
ATTACHED TO THE U. S. S. IROQUOIS, 1883.**

During the past year some improvements have been made in the berth-deck by the removal of the sick-bay to the spar-deck, the abolition of the brig, which was in an inconvenient, badly ventilated, and worse lighted situation around the foremast, the permanent opening of two powder-scuttles under the forecastle, which are fitted with low brass combings to prevent accidents, and the opening of the door in the fire-room bulkhead, which had previously been kept closed. By these changes a space of 1,600 cubic feet has been added to the berth-deck and its ventilation markedly improved. Since these alterations have been made, under almost all conditions of wind and weather a strong current of air passes out through the opening in the fire-room bulkhead to the after fire-hatch, although it was anticipated when the opening was made that the current would be in the other direction.

The removal of the sick-bay bulkhead allows a much freer circulation of air in the forward part of the berth-deck than was formerly the case, as the former sick-bay hatch with the scuttle above it in the top-gallant forecastle are not at present separated from the body of the deck, and serve as moderately efficient ventilators to that part of it forward of the forward fire-hatch, which was formerly the worst provided for in this respect.

Whenever it is necessary to keep prisoners in confinement a small section of the berth-deck forward is screened off with canvas. A temporary brig is thus provided within the limits of the old sick-bay, well ventilated and sufficiently well lighted, a decidedly more hygienic arrangement than when the regular brig was in existence.

The sick-bay is at present under the top-gallant forecastle in the extreme forward part of the ship, and is partitioned off from the body of the forecastle by canvas curtains. The space included in this sick-bay, though not as great as in the original one, is of a more available shape, and six men can be accommodated in it without crowding. It is abundantly lighted and ventilated through the two bridle ports into which glass sashes have been fitted, a scuttle in the deck above, and the hawse pipes, and so far has proved much less wet and uncomfortable at sea than was anticipated. The hygienic superiority of this sick-bay as at present arranged so greatly outweighs any minor inconveniences incident to its position and due to the anchor chains and other tackle that pass through it, that it is considered incomparably better than the usual berth-deck sick-bay.

During the year two outbreaks of yellow fever occurred on this vessel, both traceable to infection at Callao, Peru. Of the first a full report has already been forwarded.

In the second, the only individual affected had been in Callao for three days, in violation of an order prohibiting the enlisted men from remaining out of the ship after sundown. During this time he had

visited the Guadalupe Hospital, in which yellow-fever cases had recently been treated, and which was in a very dirty condition.

This patient died in six days after his admission to the list, the fever having run a typical course.

As soon as the nature of the disease was suspected the patient was removed to the poop, where a temporary canvas hospital had been rigged and three men who had been affected with the same disease during the previous outbreak were detailed as his attendants.

The ship, at the time of the appearance of the fever, on December 12, was at sea, a few hours out of Callao, on her way to Talcahuana, Chili, and as the weather was cool and breezy, and the above-mentioned patient had been promptly isolated, no further cases appeared.

**EXTRACTS FROM THE REPORT OF SURGEON B. S. MACKIE, U. S. N.,
ATTACHED TO THE U. S. S. JAMESTOWN, 1883.**

The Jamestown sailed from Boston, Mass., for Barbadoes, West Indies, on the 17th of January, 1883, making a long and rough passage of twenty-three days, during which time the gun-deck was constantly wet from leakage through gun-port shutters around the guns. During the greater part of this time the boys were much exposed to cold and wet weather while on watch, and upon being relieved had only the wet gun-deck to retire to. This state of things, together with the hardships already endured by them during the winter at Boston, which were reported in the last annual report, caused many cases of diseases of the respiratory organs, so that during the first quarter of the year there were under treatment on the sick list twenty-one cases of bronchitis acuta, eleven cases of bronchitis chronica, three of which were sent to the Chelsea Hospital before sailing from Boston, one of pleuritis, sent to the same hospital, and afterwards proving to be pneumonia, and two of pneumonia, both of which occurred during the voyage to Barbadoes. One of these cases terminated fatally, the patient, Thomas P. Delaney, first-class boy, having had a previous attack of the same disease a few months before. In addition to these cases, there were under treatment seven cases of acute and two of chronic rheumatism, all attributable to exposure to wet and cold at Boston and on this voyage. Upon arriving at Barbadoes, and thus being in warm pleasant weather, an immediate improvement took place in the cases of diseases of the respiratory organs, and by the end of the quarter but one case of chronic bronchitis and one case of pneumonia, which was convalescent, remained on the list. The ship remained thirty days at Barbadoes during a part of February and March, with much benefit to the boys, for the climate is delightful during this part of the year. So much has already been written about the geological formation, climatic peculiarities, statistics of disease, and sanitary condition of the West Indies that it does not seem necessary to touch upon these subjects. Yellow fever and malarial fevers are common to them all, although in not a few of them do they claim the former to be an imported disease. No doubt Barbadoes is freer from this disease than many of the other islands, for I was informed by Dr. Hoile, staff surgeon Her majesty's army medical department, and in charge of the army hospital, that the disease visited that place in an epidemic form only about once in every ten years. We saw nothing of it, nor did a case of this disease occur on shore during our stay at Bridgetown. One marked and interesting peculiarity connected with this island, which is more thickly populated than any equal area in the world, is its principal article of food, the flying-fish, countless millions of which swarm in its waters. They are easily taken in great quantities by the fishermen during seven months of the year, and are the chief food of the negroes, and are equally enjoyed by the whites. This supply of food at their very doors is a great boon to the negroes, and to the sugar planters also, who, in consequence of its cheapness, are enabled to get very cheap labor, which makes the cost of sugar-making much

less than in the other West India islands. In this connection it may be mentioned that one of the largest sugar planters informed me that while his Barbadoes plantations yielded a handsome profit, his sugar estates in another island, where the flying-fish could not be obtained, were mainly on this account a source of great loss to him.

Port de France, Martinique, was next visited, the ship arriving on the 13th of March, and remaining fifteen days, during which time the northeast trades fell off in force, and very warm weather was experienced. Nothing worthy of note occurred here, excepting much drunkenness among the boys, when allowed to go on shore on liberty. This was due to the great cheapness of the fiery new rum drunk by the negroes, and to the desire to be considered regular jack tars.

Sea-bathing was much indulged in here, as at Barbadoes, by the boys, and was no doubt conducive to health as well as cleanliness. St. Thomas was next visited, where a stay of twelve days was made. This place, since steamers have largely superseded sailing vessels, has lost its former commercial importance, and the inhabitants now seem to be chiefly occupied in selling off their old stock of goods. It is said to be much more free from yellow fever than formerly, one of the chief physicians informing me that no cases of that disease now originate there, as was the case in former times. He attributed this to the fact that formerly there was little circulation in the waters of the almost land-locked harbor, while now there is free circulation, in consequence of the opening of a new channel into the harbor, which was accomplished a few years ago.

The passage to Newport from Havana was accomplished in fifteen days, the ship reaching Newport on the 16th May. The weather as the ship approached Newport became quite cold, and from this time up to the end of the second quarter the cases of bronchitis acuta numbered thirteen, two being sent to the Chelsea Hospital. Of chronic bronchitis there were eight, and three were sent to the hospital. Two other cases of chronic bronchitis developed into phthisis pneumonia chronica, and were also sent to the hospital. One case of pneumonia occurred and was sent to the same hospital. Twenty cases of tonsillitis and five of pharyngitis were also treated. The majority of these cases were among those who had suffered from similar attacks during the stay of the ship at Boston and during the passage to Barbadoes. During this quarter eighteen cases of febris intermittens and three of febris remittens were under treatment. These arose from exposure to malaria in the West Indies. Although the boys indulged in eating fruit a great deal, only nine cases of acute diarrhoea and one of acute dysentery occurred. The ship again set sail from Newport on the 13th July bound for Lisbon, which place she reached after a passage of thirty-two days. A stay of two weeks was made at this port, during which liberty was given to all hands. The next port visited was Gibraltar, whence, after remaining six days, she sailed for Madeira. Liberty was given at the latter place. The passage back to Newport was forty-two days in length, and the last two weeks of it very stormy and cold. The ship reached Newport on the 29th October, completing her cruising for the year. She remained at Newport until the 23d November, when she proceeded to the navy-yard at New York, via Long Island Sound, for repairs.

During the last two quarters of the year the amount of sickness was much less than during the first two, and the cases were much less severe, owing to the pleasant summer weather from June to November.

The year ended with only one case, one of tonsillitis, continued to the first quarter of 1884.

The system of commuting all the rations in the boys' messes, and purchasing food with the money thus obtained, was in operation on board this ship during the greater part of the year, and was found to work well, so far as the health of the boys was concerned, but is open to objections, since the money may be injudiciously expended in the purchase of food not so good as that supplied in the regular ration. The practice of accumulating a surplus from the ration money and giving the boys spending money out of it is to be deprecated, as this money should all be devoted to the improvement of their diet. It seems hard that a boy should be totally without a cent of money until he gets out of debt for his outfit of clothing, particularly since it often takes from six to eight months to accomplish this, but it does not seem to me proper to provide him with small sums of spending money, from time to time, at the expense of his stomach. It is quite certain that good provisions can often be purchased at less than Government prices, and it is indeed necessary to supplement the regular ration by the addition of such articles as baker's bread, potatoes, and butter, but it is open to doubt whether oleomargarine, glucose, and tea at 20 cents a pound, are proper foods. I have seen no harm arise among the boys from partaking of these articles, but I think it would be better to adhere to good butter, good cane-sugar, and more high-priced tea, until it has been satisfactorily demonstrated that there is no objection to these articles. I do not see why oleomargarine and glucose should not be good articles of diet, but should not recommend them as substitutes for butter and cane sugar until experience proves them to be as good. I doubt whether really good tea can be purchased for 20 or 25 cents a pound, and would be inclined to fear it might be adulterated or damaged. No potatoes are supplied in the regular rations, and the allowance of hard tack, one pound, is found to be insufficient, and upon this ship the boys have been furnished with a pound and a half of baker's bread in lieu of it, which quantity seems to be ample. The allowance of butter should be increased, since it renders bread much more palatable than when taken dry. I am of the opinion that these and other defects in the regular ration could be amply supplied by commuting five rations in every mess of twenty boys. The water supply is insufficient when the ship makes long passages, and all hands are put on an allowance of one gallon and a half a day, which is too little in warm weather. In these days of improvement there seems to be little reason why there should be any stint in the allowance of water for drinking and cooking purposes. A distilling apparatus should be put into the ship to obviate this evil.

The officers seem to suffer much more during the long voyages made by this ship than do the boys, since much dyspepsia prevails among them, in consequence of a prolonged diet on canned meats and vegetables and want of physical exercise. Canned meats and vegetables, with some exceptions, seem to be devoid of certain volatile principles, which constitute the flavor, and soon pall on the taste. No doubt much harm may be done by the decomposition of solder, used in sealing the cans, pieces of which are found to have dropped into the majority of the cans. It does not seem improbable that vegetables or fruits of an acid character, when kept in cans for a long time, may act chemically upon the tin of the can and become impregnated with salts of tin, which are known to produce injurious results when introduced into the human system. The symptoms in the cases of dyspepsia just mentioned have been those of ordinary indigestion, discomfort, and even pain in stom-

ach and bowels, severe headache, nausea or vomiting, constipation or diarrhœa. These attacks are frequent during a long passage, and result in more or less deterioration of the general health, which is, however, soon restored upon reaching port and obtaining a diet of fresh provisions.

In conclusion, it may be mentioned that the want of a sick-bay has been greatly felt. The ship is so crowded that it is almost impossible to find a place in which a cot may be slung and be out of the way, and such a thing as isolation or quiet is almost out of the question.

**REPORT OF SURGEON GEORGE W. WOODS, U. S. N., ATTACHED TO
THE U. S. S. JUNIATA, 1883.**

During the last year the Juniata has been occupied in making a very extensive cruise, visiting no less than 33 ports in Europe and Asia.

During this period, considering the changes of climate to which the ship's company has been subjected, and the visiting of India during the summer, when the heat and moisture combined render the whole lower country most insalubrious, the health of the crew has been excellent, for, while the sick-list has not been small, there has been no form of serious illness originating in climatic or ship-board conditions.

The only case of serious disease was that of Commander George Dewey, who was sent to the naval hospital at Malta, with abscess of the liver, as a sequel to typhoid fever, the interest of this case being in the obscure symptoms of this complication, and the situation where it pointed near the free costal border, about 4 inches from the spinal column. This case, however, originated in exposure to sewer gas, antecedent to the reporting of Commander Dewey on board the Juniata.

A second case of typhoid fever, originating in exposure at Canton, China, was of an unusually mild type. Of these two cases I append charts of temperature.

Before reaching the coast of India the following sanitary suggestions were formulated at the request of the commanding officer, and, being approved, were carried out as perfectly as circumstances would permit:

U. S. S. JUNIATA,
At sea, March 22, 1883.

Commander P. F. HARRINGTON, U. S. N.,
Commanding U. S. S. Juniata:

SIR: I would present the following few sanitary suggestions for your consideration, in view of our near approach to the Asiatic station during the hot and rainy season.

The bilge should be kept as thoroughly emptied as possible, and frequently cleansed, whitewash freely applied at the accessible portions, and disinfectants used if there is sufficient decomposition to make it necessary.

Holystoning of both the spar and berth decks should be avoided as much as possible, save during dry and pleasant weather, and should be made as short a process as is consistent with complete cleansing, that the men may not be compelled, for a lengthy period, to remain with wet feet. The berth deck should be dried by steam immediately after holystoning. If the night dews should be heavy, sanding of the decks at sunset is recommended.

Awnings should be spread as soon as the decks are dried, triced up at sunset, spread again at eight bells of the first watch, and again triced up when all hands are called.

Coffee should be served when all hands are called, and before any duty is demanded of them it should be ascertained that it has been served.

The wearing of flannel undergarments should be strictly enforced. Each man to change on retiring, that the flannels worn during the day may become dry, and their wear resumed in the morning. Flannel stands at the head of all material for underwear, as an absorbent of perspiration and a protector against the effects of cold, or alternations of temperature.

Both officers and men should be ordered to provide themselves with abdominal bandages of flannel, 10 by 40, to be habitually worn while we are in Asiatic waters, and especially on the coast of China. Each person should provide himself at least with two bandages.

The wearing of white cap-covers should be enforced, it having been shown that the temperature of the cap is thereby reduced several degrees.

Bathing should be encouraged, and all facilities allowed for the purpose.

The daily drills should be at as early an hour of the day as practicable or at sunset.

Liberty should not be granted save during the period extending from two hours after sunrise to sunset, unless it is positively ascertained, through communication with the local sanitary officers, that there is no danger to health in spending the night on shore; and under the same circumstances the sending of night-boats should be prohibited. If such duty becomes necessary—assuming the danger to be generally from malarial poison—officers and men should have quinine administered to them before being sent on this duty. An inspection of the water should be made at the time of each distillation to determine its potability, more especially with reference to excessive saline constituents, and that in the tanks should be frequently examined to determine the presence of decomposing substances accidentally introduced into the water-tanks. An inspection of the bumboat should also be made, and all articles of food, especially fruit, examined by the medical officers with reference to any possible injury to health likely to result from their consumption by the crew.

Officers and men should be ordered to report to the medical officers at the first evidence of diarrhoea, a simple looseness of the bowels always preceding for a longer or shorter period, an attack of Asiatic cholera. Undoubted cases of cholera should be sent on shore as soon as practicable.

In case of boat expeditions, water from the ship should be carried to furnish a supply for as long a period as possible, and the medical officer ordered to furnish such substances as when added to non-potable water may render it innocuous.

The ventilation of the berth-deck should receive strict attention, the wind-sails being set constantly when the temperature is excessive, and always at night. Attention is particularly called to the inadequate ventilation of the storages and sick-bay, where scuttles ought to be introduced, with copper ventilators.

In case the temperature of the fire-room should exceed 105°, fire-room watches should not exceed two hours, and if there is any excessive exhaustion the fact should be at once reported to the medical officer, that he may administer stimulants.

I am, respectfully,

G. W. WOODS,
Surgeon, U. S. N.

The effect of the Indian climate was, however, manifested in a generally debilitated condition of the ship's company, showing itself in marked anæmia, furunculi, and abscesses, with a universal tendency to the formation of sinuses; also some diarrhoea, only one case, however, running into the chronic form, and this eventually making a good recovery. The boils and abscesses seemed to result in a degree from the prolonged visitation of *Lichen tropicus*, in some instances assuming an erysipelatous character, and presenting all the features of an eruption of poison oak.

At Bombay and Calcutta we were warned by the health officers against the use of mineral waters, bottled lemonade, and ice cream, offered for sale from the bumboats, which beverages are prepared by the natives with unfiltered river and well water, and in the experience of all Indian physicians are a constant source of cholera. The crew were warned; the prohibited articles were not permitted to be sold alongside, and condensed water alone was issued during our stay in those ports. The result of these precautions, and the enforcement of the sanitary regulations, was that, while cholera existed in both cities, no case was developed amongst the ship's company. On our departure from Calcutta, however, we carried with us the infection of another disease, which soon began to develop, and a large percentage of both officers and men during the next three months were affected with dengue fever. The fifty cases appearing on the "Report of Sick," had their origin in epidemic influence to which the ship was exposed on the Hoogly River, subsequently maintained by local infection. Cases continued to appear during the quarter, the disease losing its force and some of its characteristics during the latter period of the epidemic. There was a general *malaise* for a couple of days, with headache and constipation, followed by fever, with a temperature of 101° to 103°, alternating with irregular

chills. The pain, which was most excruciating, was generally localized to the lumbar region; though sometimes the whole muscular system was affected, especially the lower limbs. The pain was muscular, never articular, and the glands were in no instance involved. The debility was very great, and there was complete anorexia, while digestion in some cases was so feeble as to cause distressing flatulence, both gastric and intestinal. The mouth and fauces were in some cases peculiarly dry, with a sensation of dryness extending to the esophagus and stomach, both seeming to be in a state of rigid contraction and accompanied by a peculiarly disagreeable saccharine taste, constantly present. This condition lasted from 2 to 4 days generally, when the pain and fever disappeared, and in many cases ended the attack. In the majority of instances, however, there was a relapse, after a variable period of from one to five days, and lasting for about the same irregular period. This relapse was accompanied by conjunctivitis and severe orbital pain, and rarely by eruption—which was characterized by a few red papulæ on the chest and neck, subsequently becoming pustular, and rarely numbering more than twenty, widely distributed. In a few cases there was cutis anseria persistent for many days after the fever had subsided; and, in all cases, there was prolonged debility requiring a long course of ferruginous tonics, and, additionally, nutritious diet with stimulants.

It is probable that many of the cases of *febricula* and *febris simplex* appearing on the list since *denguis* manifested itself as a diagnostic disease were relapses of the same, most of them being patients who had been affected with the disease during the period of the epidemic.

I would respectfully call the attention of the Bureau to the unsatisfactory condition of the sick-bay, which, in its new location, on the port side of the berth-deck, forward of the mid-ship section, and with the addition of a bath-tub and water-closet, was considered to be a vast improvement over the sick-bay in its old position under the fore-castle. It has not proved so in my experience. The space allotted is much smaller than that occupied by the old position forward, and, being still further reduced by the large bath-tub and closet, is entirely inadequate. The ports are so small that artificial light has to be used constantly, and the ship is so low in the water that they cannot be opened save in the smoothest weather, and there being no deck-port, as there should be, the ventilation of the sick-bay is at times of the very worst. A portable tub would serve every purpose to be attained by the stationary one, so seldom required, and the close stool chair provided—an admirable type of this indispensable convenience, is vastly superior to the stationary closet, which, with the greatest care, will become a nuisance, as it cannot be cleaned and disinfected as perfectly as the portable bucket of the chair.

The hygrometric condition of the berth-deck, as exhibited by the atmospheric report, calls for mention. Holystoning is performed twice weekly, and hot water is used on other days to cleanse the deck, steam being ordered to be afterwards turned on for an hour. No direct relation has been established between the moist condition of the atmosphere between decks and the production of disease; but the suggestion has often been made that the indisposition of wounds to heal, the sloughing of many, and the disposition to the formation of sinuses, might be due to this cause, and that it has been an agent in the perpetuation of malarial conditions.

A more earnest attention to the drying of the decks has been recommended, and, if this shall not succeed in maintaining a less moist atmosphere, that the decks be shellacked.

GIBRALTAR.

January 10 to 23, 1883.

Gibraltar is the Mons Calpe of the ancients, one of the Pillars of Hercules, and is situated at the most southern point of the province of Andalusia in Spain, but now an English province. It is a lofty, rocky promontory, rising to the height of about 1,400 feet, and separated from the territory of Spain by a narrow stretch of flat sandy land, the "neutral ground." "The Rock" is composed principally of compact limestone, but there is some red sandstone and osseous breccia rich in fossils. It is tunneled and excavated in a marvelous manner, so as to constitute it one of the most remarkable fortresses in the world, mounting more than a thousand guns, many of them of the most modern type and heaviest caliber.

The flora of the peninsula embraces nearly 500 species of plants and ferns indigenous to the locality, and 50 introduced from other countries. The fauna is comprised in a few birds, including the eagle and many wild pigeons. Rabbits abound, and there are a few tailless fawn-colored monkeys. Snakes are numerous—but fortunately not venomous—as well as lizards and centipedes.

The civil population, as determined by a recent census, is 18,014, represented by 15,302 Catholics, 1,203 Protestants, 1,465 Hebrews, and 44 Moors.

The military embrace 4,600 officers and men.

There is a large floating population, Gibraltar being a port of call for most steamers for the Mediterranean and the East, which gives to the city an aspect of busy life, and great activity in business.

The town, embraced within fortifications, is built on the western side of the peninsula, between the abruptly rising rock and the shore, and consists of two distinct portions, separated by the *Alameda* and Public Gardens, known as North and South towns. The former is the commercial city, and has two long streets running parallel with the shore, where a large business is conducted. Roads zigzag over the hills, on which there are many beautiful villas and official residences, and everywhere there are large barracks devoted to the residence of officers, soldiers, and their families.

Gibraltar has a rainy season, embraced between the middle of September and the latter part of May, and a dry season, comprising the rest of the year. The average rainfall is about thirty-five inches, but it has been often as low as fifteen inches, while in the year 1855 it rose to eighty inches.

In the past, Gibraltar has been dependent on the rain for its supply of water, which is collected in cisterns and carried in jars or skins throughout the city, being sold for a trifling sum. Since 1865, however, the sinking of wells on the north front has given an abundant supply of water, which is pumped into immense tanks on the hills, and thence distributed. This water is derived from a clay bed so near the sea that it becomes brackish when the contents of the wells get lowered by excessive pumping, or at the end of summer, when it is scarcely potable; but it renders the inhabitants less dependent on the rainfall.

The prevailing winds are east and west, the former most common during the summer and often called the "Levanter." When it blows, dense clouds hang over the rock, creating a most disagreeable moisture, and affecting every one most unpleasantly. It produces great depression of spirits, mental and physical inertia, and pains in the bones with

slight fever. The north wind blows in winter occasionally, producing a period of unpleasantly cool weather, though the thermometer does not indicate a low temperature. Ice is rarely formed, snow never falls, but hailstorms are not uncommon. The climate is most delightful during the winter and spring months, but the rest of the year is a hot season, during which the Lëxanter is the prevailing wind, rendering Gibraltar a most undesirable place of residence.

The mean temperature is recorded at 62°·13; the maximum heat in July at 92°·20, and the minimum in February at 32°·6.

A board of sanitary commissioners has charge of the drainage, cleansing, paving, water supply, lighting of the streets, &c. In every department the work is admirably performed, and quite on a level with the sanitation of other cities. The new source of water supply from wells is utilized in flushing the sewers and cleansing the streets, which are the cleanest of any in Europe.

The most common diseases are pneumonia, phthisis pulmonalis, and the various fevers of malarial origin. What is known as "rock fever" is a common continued fever generally associated with some exposure to cold when overheated, and is common among the enlisted men of the army.

The recorded mortality appears to be very large, but this is due to the specially high death rate amongst children in the overcrowded dwellings of the poorer classes, where they suffer from neglect and insufficient nourishment. The health of the general population and of the troops is excellent, and it is a matter of constant observation that all regiments improve in health during their stay at "The Rock." Yellow fever has made many visits to Gibraltar, but has never succeeded in getting a foothold since the early part of the century. Gibraltar has two hospitals, the Naval and Civil. The Naval Hospital receives both soldiers and seamen, and has accommodations for 320 patients, 270 beds being at present occupied. It is a large building with broad piazzas, surrounding a court-yard planted with orange trees, and its wards are commodious and well ventilated. The Civil Hospital, on a height overlooking the town, was established in 1815, and is now being extensively repaired at the expense of the Imperial Government. The medical staff consists of a surgeon and an assistant, who are both at liberty to engage in private practice, but are subordinate to the director-general, who belongs to the English army. The hospital can accommodate 100 patients, and had on January 12, 1883, sixty-nine beds occupied. The dispensary practice is very large, and during 1882 gave gratuitous relief to 23,000 patients, many of them from neighboring Spanish towns, for which privilege the Spanish Government donates annually \$250 to the Catholic section of this hospital. Fifty cents per diem to each patient entering the establishment is the charge. The hospital has three divisions, according to religion, viz, Roman Catholic, Church of England, and Jewish. Each division is under the control of a special commission of its own religion. It is here that naval seamen are received for treatment. The Gavino Asylum was founded in 1850 by the trustees of the estate of the late John Gavino, United States consul at Gibraltar in the year 1804. It was established for the support of aged paupers and orphans, and now cares for twenty-eight old people and eighteen orphans. Gibraltar also has a Soldiers' Institute, a Sailors' Home, a lunatic asylum, and a military and civil prison.

The city has a spacious market, built at a cost of £10,000, which is generally well supplied. Meat is brought from Galicia, south of Spain, and Morocco, the former being by far the best. Morocco also supplies

a large quantity of poultry and eggs, which are constantly brought over by steamers from Tangier, packed in cane baskets, closed at the top and bottom with nettings.

The supply of fish is abundant and in great variety, embracing the sole, turbot, John Dory, mackerel, sardine, mullet, red and gray, anchovy, bonito, and many varieties of shell fish of excellent quality.

Fruits and vegetables are both abundant and cheap, and come from many parts of Spain, Portugal, England, and France. The chief fruits are oranges, lemons, apples, figs, melons, grapes, strawberries, peaches, apricots, cherries, Japanese medlars, walnuts, filberts, prickly pear, &c.

The food of the people consists principally of soup, stewed meat and vegetables, much fish, Italian pastes, half-salted pork, garlic, and *salada*. The cooking is between the Spanish and Italian styles.

MALTA.

January 28 to February 26, 1883.

The month of February was spent at Malta, in the harbors of Valetta and Stiema, the latter being its quarantine station, the two separated by Mount Sciebarra, on the slopes of which the city of Valetta is built. It is a terraced city inclosed within ancient fortifications, and the level summit of the mountain, where is its boulevard, the *Strada Real*, is attained by "streets of stairs."

The buildings of Valetta are generally large and commodious stone structures, and the rooms are exceptionally spacious and lofty. The walls are of great thickness, making the houses cool in summer and warm in winter, when coal grates are sufficient for all heating purposes.

The island of Malta is a limestone formation, with scarcely any arable soil save that which has been brought from Sicily. This, however, is made to produce abundantly, though, with so large a population, it is necessary that Italy and Sicily should supplement the native supply very largely.

This island embraces about 100 square miles, with a shore line of 44 miles, indented by many bays, and is dotted over with numerous villages, Valetta being its principal city and capital. The population in 1880 was 152,000, the working classes numbering 149,270.

Malta enjoys an exceptional climate from October to May, and though the rainfall during this period is 23 inches there is scarcely a day when it is not possible for an invalid to go out of doors, as a day without sunshine is the exception, the rain falling habitually during the night, and being speedily absorbed by the soil. During this period the thermometer rarely falls below 51° or rises above 71°. Snow is unknown, and ice only occasionally forms. The summer, however, is a period of intense suffering from heat through the day, though the thermometer does not often record a higher temperature than 86°; and the autumn is the period of the *sirocco*, blowing from the southeast across the African deserts and then over the Mediterranean.

This wind, laden with moisture, has a most remarkable effect on all, without exception, aggravating every disease, originating neuralgic and other nervous affections, and, in the healthy, producing debility with a remarkable condition of nervous irritability. The northwest winds are the coldest, and bring rain, which falls often as a veritable deluge during the winter months, principally at night. This water is conducted from the flat terraced roofs into capacious cisterns, and formerly constituted the only supply. At present water is brought from the

Bingemma hills by means of an aqueduct 9 miles in length, and is distributed throughout the city of Valetta.

The situation of Valetta gives the most perfect drainage in all parts of the city, but the sewers and house connections have been in the past much neglected. This, however, is now being remedied by the most active work on the part of the authorities, and the conducting of the flow of sewage beyond the harbors.

Being on the highway of travel from the East, Malta is frequently visited by cholera, and the most careful quarantine is maintained as a necessity in years of danger.

There are no diseases peculiar to Malta. Sun-stroke is common during the hot months, and catarrhal and rheumatic fevers in the spring and fall, while typhoid fever prevails in midsummer, and remittent fevers in the early autumn.

The island is well supplied with free dispensaries, with hospitals, both civil and military, and with many public charities for the care of the orphan, the aged, the incurable, and the insane. It has also many accomplished medical men and surgeons who, however, have their practice controlled by Government supervision, and their fees, determined by legal regulation, are absurdly small.

The medical school, a department of the ancient university, seems to be admirably conducted. The course of study is five years, and its graduates are supposed to afterwards spend a course of study on the continent, or in England.

The natives of the island are exceptionally healthy, and attain to a great age, probably owing to their simple habits of life. Meat is not much eaten by the peasantry, bread and Italian pastes forming the basis of their food, with fish, oil, and Sicilian cheese, with occasionally Sicilian wine or brandy.

Malta being the naval headquarters of the English fleet in the Mediterranean, with a large dock-yard located here, and the harbor constantly full of naval vessels, the Royal Naval Hospital becomes a most important institution. This hospital is located at Bighi, upon a lofty eminence overlooking the harbor of Valetta, and consists of a series of Doric buildings, surrounding a central paved court, which covers an immense cistern. Upon the sides towards the court there is a sheltered corridor leading to ornamental grounds, and the external face looks upon the sea from lofty windows. The wards give great cubic air space, and have the extraordinary height of 20 feet. In its general appointments, diet list, and methods of management, this hospital differs in no essential particulars from our own. The medical director in charge is, however, also medical purveyor to the fleet, and clothing and small stores, including special clothing for the sick, both for day and night wear, are kept in stock for distribution to the patients, and in charge of a resident paymaster.

During the late war in Egypt, this hospital was a most important institution, and was crowded to its utmost capacity. Its plethoric condition, however, was constantly being relieved by the troop-ships, which, touching here at regular intervals, take to England all patients able to travel who are not likely to be returned to duty for a long period. It was in this hospital that Commander George Dewey, of the *Juniata*, received such kind and faithful attention from Medical Director Dick, and Surgeons Fitzgerald and Yeo, of the Royal Navy.

EGYPT.

March 4 to March 20, 1883.

Modern Alexandria occupies a position on a sandy peninsula extending into the Mediterranean near the most western branch of the Nile. It has two harbors, the eastern and western, the former being the commercial harbor of the ancients, but now so shallow as to be only used by the smaller fishing craft. The western harbor, however, has been extended and rendered secure by breakwaters, so that it is now one of the best and most capacious of Mediterranean ports and always crowded with shipping, Alexandria being a most important port on the Eastern commercial highway.

Alexandria has a population of about 220,000, and it is estimated that one-quarter of this number are Europeans, mostly French, Italians, and Greeks, though every nation is represented; so, while the city presents every characteristic feature of Eastern life, a large portion has been built up in the European style and has all the appearance of a modern French or Italian city.

The location of Egypt and its relation to the diffusion of Asiatic cholera—brought either from its Indian home or its breeding place in Mecca, whence it is spread by returning pilgrims—has given to this country a degree of sanitary importance which has demanded the most rigid control of her quarantine and her inland sanitation. In the interests of all nations this has been for some time under the control of an International Sanitary Commission, made necessary for the protection of Europe on account of the inefficient manner in which such service is performed by Oriental nations. Its service is now extended to the Turkish and Egyptian ports, and to Persia.

Port Said is located at the Mediterranean entrance to the Suez Canal, where, by means of artificial stone jetties, a fine harbor has been formed, embracing an area of about 500 acres.

The city occupies a position on a low island separating the Mediterranean from Lake Menzaleh, and is entirely modern in its buildings, streets, and general features, its population being of the same mixed character as is found in most of the Eastern seaports, the French, however, predominating.

Ismailiye is a pretty town of from three to five thousand inhabitants, founded when the Suez Canal was in process of construction, but has since lost much of its importance. It is, however, an attractive place, with its pretty villas surrounded by ornamental grounds and its shaded streets. The town is located on the banks of Lake Timsah, a beautiful sheet of water, which was before the opening of the canal a pestilential swamp, but now it is one of the most salubrious places in Egypt and a favorite winter resort, the atmosphere being remarkably dry in spite of its location near the sea. There are no prevailing diseases save at the low stage of the Nile, when typhoid is common here as elsewhere in Lower Egypt, but ophthalmia is as prevalent in Ismailiye as in the other Egyptian cities.

Ismailiye is not far distant from the battle-field of Tel-el-Kebir, and was an important camp during the recent Egyptian campaign. Here typhoid fever raged amongst the English troops; attributed to drinking the water of the Nile, contaminated with the filth of camps and dead bodies. It was terribly fatal, many succumbing in the first stage overwhelmed by the poison, and when they died in the later stages the

intestinal mucous membrane was found a mass of ulceration from the rectum to the ileo-cæcal valve.

This was not the only danger the troops had to encounter from drinking the unfiltered river water during the campaign of 1883, the introduction of parasites being of as grave an importance. Dr. Cobbold, in the British Medical Journal of September, 1882, discusses this danger, and enumerates the *Bilharzia hæmatobia*, the *Anklostoma duodenale*, and the *Filaria sanguinis hominis*, as being of chief importance. The *Bilharzia* is a fluke occupying the blood-vessels, and the *Anklostoma* is a minute crustacean blood-sucker occupying the intestinal tract. The danger is the same for the traveler as for the resident, and all drinking-water should be boiled or filtered, and salads and green vegetables should be avoided unless they can be cleansed under one's own supervision.

Suez is located on low land at the head of the Gulf of Suez, and its surroundings are most barren and desolate. Before the building of the Suez Canal, it was a small Egyptian village; but that work gave it some vitality, and it now has a population of 10,000, embracing 7,000 Egyptians—English, French, Maltese, Greeks, and Italians making up the remaining 3,000, the Italians predominating. There is a characteristic Egyptian or Arab quarter, and a European quarter, and there is always a certain amount of life and bustle incident to the constant arrival or departure of steamers, and the trade with tourists, who eagerly buy the beautiful shells and coral of the Red Sea.

There are three hospitals in Suez—French, English, and Egyptian; and an English garrison has been located here ever since the Abyssinian campaign.

Here typhoid fever rages at the low stage of the Nile, and ophthalmia is more common perhaps than elsewhere in the East, keratitis with opacity being the inevitable result. It is so universal that to a casual observer it would seem that every Egyptian or Arab shows some evidences of having been affected with the disease; and with the majority of infants pus is seen welling out from beneath the puffy lids, around which swarms of flies are always hovering.

These flies carry the contagion, and during the late campaign it was communicated to the English soldiers in this way in countless instances.

The seasons in Egypt are comprised in two divisions, the temperate and the hot, the first embracing the period from November to April, the second the remaining months of the year. The last weeks of the latter season are especially uncomfortable, when the "khamseen" blows from the desert thoroughly desiccated and laden with sand, and the thermometer reaches often a height of 105°.

The cooler season is a most grateful one to travelers, in both Middle and Lower Egypt. The nights and mornings are cool, the air dry, the atmosphere generally clear; though rain sometimes falls and fogs are not rare. The mean winter temperature is placed at 59°, and that of summer 85°—the maximum being 95° in Lower Egypt, save during the period when the "khamseen" blows.

The water supply of Alexandria, Ismailiyeh, and Suez is from the Nile and its tributaries, and from wells. In the two first-named cities it is raised and distributed by appropriate water-works, and also sold on the streets from goat skins by the native sekkas. The water is exceptionally pure, but requires filtration from the various contaminations it receives in its course.

The sanitary and quarantine regulations which are applied to the cities described, as well as to the whole of Egypt, will be thoroughly comprehended by a perusal of the following translation of a letter ad-

passed to our consul at Alexandria by the secretary of the International Maritime and Quarantine Commission:

will endeavor to furnish you the information you desire on the working of the sanitary service in Egypt, that you may be able to transmit it to the surgeon of the United States steamer Junia, according to your request addressed to me.

The sanitary service in Egypt is divided into two entirely distinct sections. One is termed the "maritime and quarantine section," which devotes itself exclusively to duty on the frontier and at the sea-ports and exercises a strict surveillance over all arrivals and departures, to the end of protecting the country, as well as Europe, from introduction of epidemic or epizootic maladies.

This section acts directly under the "international maritime and quarantine commission," which is located at Alexandria, and a medical and administrative staff is constantly numerous in all the ports and frontier posts of the country. It is charged with the duty of granting bills of health to outgoing ships, to establish quarantine measures, and to take cognizance of the arrivals of suspected persons, and products of animals as well.

The other is the "hygienic section," properly so called, and holds authority from the "commission of public health and hygiene" sitting in Cairo. This section includes the interior sanitary service, the duty of which is to prevent the introduction of disease, and to maintain the general health in the interior of Egypt, by the application of hygienic measures and the maintenance of a medical police. This is further extended by the gratuitous practice of vaccination; gratuitous treatment of the sick; the registering of deaths; in fine, the object is to eliminate and destroy all the causes which in any way would be able to exercise any unfavorable influence on the general public health, as well as on animal life. This section is composed of a staff of physicians and veterinary practitioners located in the most important cities of the country, and in the principal interior centers of population, to whom is confided the carrying out of these measures before mentioned.

In the city of Alexandria, the service of the first category—that is to say, that which is controlled by the "maritime and quarantine commission" is confided to the health officer of the Western Harbor, under the direction of a European physician, who is empowered with authority to issue "bills of health" to outgoing vessels, and to control the movements of those which arrive, and give pratique according to circumstances.

As to the service of interior public health and hygiene of the city of Alexandria, the applying of proper surveillance is confided to a sanitary inspection, which is carried out in this manner:

Five physicians, one in each district of the city, are charged with the duty of visiting the sick poor, of registering deaths, to examine food, and to supervise the hygienic work of keeping the city clean.

One physician is detailed specially to the work of vaccination, which is gratuitously performed on one day in the week, in every district of the city.

Two physicians are attached to the prefecture of police as judicial experts on all questions of legal medicine.

One physician is attached to the "bureau des mœurs" and makes the weekly examination of prostitutes.

Two veterinary physicians are attached to the abattoirs and markets.

This service controls the general hospital, attended by a large number of European and native physicians, where they receive the sick of all nations—the poor gratis, the well-to-do paying 8 piasters a day (2 francs, 15 centimes).

This service is organized in the same manner in Cairo, and in all large cities of the country (Suez, Ismailiyyeh, Port Said, Damietta, Rosetta), as well as in all the chief cities of the provinces of Upper and Lower Egypt.

ADEN.

March 31 to April 3, 1883.

The British territory known as Aden, forming a part of the Bombay Presidency, is a peninsula on the south coast of the province of Yamen, Arabia Felix, connected with the continent by a narrow neck of land, embracing about thirty-five square miles. It is physically a vast plateau formed of lofty hills and numerous valleys, and is geologically a continuation of lava. Its physical features, and geological formation, in its connection with the main land by a narrow isthmus, have tempted the English to turn it into a vast fortification, and it is now

the "Gibraltar of the East," commanding—by the shelter it gives in its capacious harbor to the English fleet, with facilities for coaling—the Red Sea and the short route to India and the East.

Several settlements are embraced within the colony. The town of Aden proper is within the "crater," also a part of the military cantonment. Here are some fine European houses, large barracks, churches, and Roman Catholic establishments, also an extensive Arab quarter. It is the ancient city, and here are the wonderful tanks for collecting and storing water. The upper road from the crater passes through a narrow gorge, and the lower through a tunnel opening upon the harbor, where is located an extensive series of powerful fortifications.

The modern business city is outside the crater, located near the entrance to the harbor, and is known as Steamboat Point. It consists principally of a crescent of large stone buildings, occupied both as dwelling and business houses, and here also are barracks, fortifications, and the governor's residence.

The houses are mostly built of irregular blocks of stone embedded in cement, with roofs of reed or bamboo, covered first with mats and then with cement. The rooms are large and airy; verandas are found on the front and rear sides of the houses, and there is generally a large court inclosed with a high wall. The rear verandas serve for cooking and keeping numerous water jars, and the yard for washing, bathing, &c.

The poorer classes live in reed and mat houses, and the Somalis in huts shaped like beehives, constructed of skins stretched over a bamboo frame.

The botany of Aden is that of the desert, and the flora embraces only 94 species, mostly plants with little foliage, or the foliage replaced by spines.

The population is about 50,000, embracing almost every race and nationality. Of Europeans the English are most numerous, of the Africans, the Somalis, and of the Asiatics, the Arabs, though the natives of India and Burmah number many thousands. The Somalis, a fine African race, are the laborers, and number probably 8,000.

The rainfall is very slight, averaging 2.45 inches only, and it has been as small as .24. May is the month of rain, and it sometimes comes as a perfect cataclysm, sufficient to fill the tanks, with a capacity of 8,000,000 gallons, in a few hours. Brackish water is obtained from wells, and is likewise brought across the line from Labej, in Yemen, the pasha having a monopoly of the sale, and deriving from it a considerable revenue. Water is also distilled in the cantonment, and sold at 1 rupee per hundred gallons.

The "tanks" referred to are vast cemented structures, thirteen in number, excavated in a gorge on the eastern side of the crater above the town of Aden. From a large table-land above, which, being of volcanic rock, has no absorbent power, the water sweeps as a torrent into this gorgo after the spring rains, and often sends a river flowing through the city, dangerous to life and property. These "tanks" date from the Persian invasion in the year 600 A. D., and were originally fifty in number, with a capacity of 30,000,000 gallons.

The climate of Aden during the prevalence of the northeast monsoon is cool and delightful, especially during the late fall and mid-winter. After January, however, it gets warm, and, from the last of March until November the hot wind, known as the *shamal*, blows from the north over the Arabian desert, and is especially oppressive in the crater. At Steamboat Point, however, the sea breezes modify the heat to a degree

of comparative comfort. The highest temperature recorded at the camp in the month of June was 102°, and the lowest in the month of January, 66°. These observations were within the "crater," the thermometer at the "Point" at the same time recording 95° and 71°.

While Aden is not to be noted as an unhealthy place, it has been observed that long residence produces great debility, not only among Europeans, but even Asiatic residents, with an impossibility to recuperate without a change of residence, and, as might be expected, convalescence from any disease or injury is slow and tedious.

The prevailing diseases are malarial, contracted in India or Africa generally, scurvy, phthisis pulmonalis, rheumatism, dysentery, and ulcers. Cholera has frequently visited Aden, as might be expected, being generally traceable to Mecca; and small-pox, always existent in this port, has at times assumed a virulent epidemic type.

The hospitals include the usual military establishments, and a civil hospital located in the "crater," a European general hospital and dispensary at Steamboat Point, and the Prince of Wales Charitable Dispensary. The hospitals are under the control of the Indian Medical Service, and the general hospital admits British and foreign seamen, The charges are 1 rupee (40 cents) per diem for men, and 2 rupees for officers.

The Bombay "contagious diseases act" is strictly enforced, all prostitutes being registered. They are compelled to live in a certain locality, and to submit to regular examination. General liberty at this port resulted in no disease whatever. Most of the prostitutes are Somalis, though many of the Arab women practice prostitution. Among the Somalis circumcision of both the male and female prevails, but the operation is not performed until the seventh year. At this time the vulva is so closed with a single suture as to prevent coition, and is not removed until the eve of marriage.

The grains used as food are rice, jowari (*Sorghum vulgare*), wheat, bajri (*Panicum miliacum*), pulse of various kinds, and maize or Indian corn. The jowari (sorghum) is eaten by both the Arabs and Somalis. The former boil it like rice, the latter pound it and knead it into a dough, which is fermented, made into cakes, and baked in mud ovens, the stalks of the jowari being used as fuel. It is also baked without fermentation, and is sometimes mixed with wheat flour. Indian corn is used in the form of meal for making bread, but is also much esteemed when green and roasted.

The upper classes of Arabs make use of ghee (clarified butter), honey and meat; the lower classes live principally on dates and fish, and a soup called "holbah," made of maithee seeds, but rarely eating meat.

Their principal beverage is a decoction of the husks of the coffee berry flavored with ginger, and as stimulants they employ tobacco and *kat*, a drug imported from the interior of India, and used as a masticatory.

The Somalis live as the Arabs, only consuming more meat, which is eaten half cooked, and using ghee in large quantities. They chew tobacco and seldom smoke.

Green vegetables are cultivated in considerable quantities at Lahej, and the markets of Aden are always well supplied. This district also furnishes grapes, dates, mangoes, melons, almonds, peaches, and pomegranates. From Zanzibar, oranges and pineapples are received, while steamers from India and Europe bring almost every other fruit and vegetable known to the world.

Bullocks for slaughtering are imported from Africa, and the beef is of excellent quality. The fat-tailed, black-faced Berbera sheep is cele-

brated for the excellent mutton it makes, and both varieties of meat are sold at moderate prices. Ordinary fowl are cheap, and eggs as well; but ducks, geese, and turkeys are imported from Suez and sold at high prices. The supply of fish is abundant and excellent.

Education is sufficiently provided for. The Government school, known as the English Residency School, is attended by children of all classes and creeds, the poor being admitted free of charge, the other pupils being charged 4 annas (10 cents) to $1\frac{1}{2}$ rupees (50 cents), per month, according to the ability of parents to pay. There is also an Arabic Government school, many private schools, and the usual educational organizations associated with the Roman Catholic Mission, including an orphanage.

MUSCAT.

April 13 to 16, 1883.

Muscat, or Mascat, is the capital city of Oman, on the eastern coast of Arabia, in latitude $23^{\circ} 23' N.$, longitude $58^{\circ} 37' E.$ It is situated at the head of a bay closed in on every side by black barren rocks, which rise to the height of 600 feet, forming an inland barrier as well as a protection from the sea, and are surmounted by many towers and fortifications. The principal forts are those of Mirani and Iilali, which guard the entrance to the harbor, defenses built by the Portuguese, their ancient guns still being mounted on the ramparts.

Muscat is a walled city with a small suburb, a valley of some fertility, where there are a few gardens and wells. The girdle of rocky cliffs embraces this suburb, and also incloses a fine, though small, harbor, where will always be found an English gunboat, English, French, and American ships, a small steamer belonging to the sovereign, ready for sudden flight, and many gaudily-painted fishing-boats.

The country of Oman is under the sovereignty of Saazid Toorki, an independent Sultan, who enjoys an English protectorate, represented by a small gunboat constantly present in the harbor of Muscat; and in consideration of his suppressing the slave trade, £16,000 is paid to him annually by Great Britain.

The sovereign of Oman—erroneously termed the Imaum—is a miserable invalid surrounded by intriguers, and afraid to go outside of his palace gates most of the time, his many relatives, all aspirants to the sovereignty, having their agents within the city constantly plotting against him. At intervals the city is besieged by one or another of these relatives, who are either bought off, or driven off with the aid of the English gunboat.

Many of the houses are well built of concrete and stone, and those occupied by the foreign consuls and the few foreign merchants are large and commodious buildings. The city principally, however, consists of small dwellings constructed rudely of mud or rough concrete, and white-washed, of hovels, mat huts, and ruins of vast buildings illustrating the period of Portuguese prosperity and magnificence in the seventeenth century.

The houses of the wealthy have a lower open story devoted to servants and storage; a second story containing a reception room and sleeping apartments, and a flat roof, where the family eat and sleep during the hotter season, small supplementary apartments being often built here. All the rooms have an abundance of long, narrow windows opening on the streets and the inner courts.

The streets are dark, stifling, narrow lanes, clean from the absence of animals, and the constant heat, with absence of rain, which soon desiccates all flesh and converts it into suffocating dust. Many of the streets and bazaars are roofed in with matting covered with mud, ventilating spaces being left at intervals, and are as dark and gloomy as the catacombs. The shops are simple stalls, and at the door of each is a stone bench, where the merchants extend themselves day and night during the hot season.

Outside of the walls there are a few gardens, and one of tolerable extent belonging to the sovereign, but nothing is cultivated beyond a few flowers, a small quantity of green vegetables, and fodder for goats.

All the supplies to support the population of Muscat, shut in as it is by a barrier of rock, must come through a single pass in the natural wall, or by sea from the neighboring town of Muttra, the outlet of Arabian commerce. At Muttra there are large bazaars, and to this point the caravans come with their loads of dates, which form the principal article of commerce. They are mostly consumed in the United States, Salem merchants having for a century almost monopolized this trade.

The population of Muscat is about 35,000, comprising Arabs, Persians, Africans, Hindoos, Parsees, and the natives of Beloochistan, the tall and dark Beloochis of Makran predominating. The Banians of India, through whom the Arabs dispose of their dates, wheat, and wool, represent the commercial class, the European resident merchants being few in number. To the Banians the custom-house is farmed out for an annual payment.

The markets are well supplied from Muttra, and the harbor furnishes an abundance of the best fish, which, with rice, dates, and coarse wheaten cakes, form the principal food of the people.

A peculiar nutritious delicacy is manufactured here, known as *haliceh*, a sweetmeat not unlike corn-starch jelly in appearance, composed of flour (of *Sesamum*), eggs, sugar, and ghee, or clarified butter. It is largely exported to India and the Persian Gulf, and is said to be very fattening. Muttra furnishes sheep of excellent quality, good beef, poultry, rice, and coarse flour.

Good water is obtained from deep wells in the suburbs, and is conveyed in a sort of flume to the city.

The climate of Muscat is one of the most trying in the East, the thermometer rarely falling below 80°. During the prevalence of the north-east monsoon, from October to April, the temperature is bearable, varying from 80° to 85°, but during the period of the southwest monsoon, comprising the remainder of the year, the higher temperatures, and the land breeze at night—the shemal—coming from across the arid plains of Arabia, and its heat intensified by the radiation from the black rocks surrounding the city, drives every one into the open air, and to the roof. Here they pant until sunrise, stretched upon Mandalay chairs, always in a state of more than semi-nudity, while attendants sprinkle them with water from a watering pot. With the morning they descend to the lower regions of the house, and hide themselves away from the effects of the fierce sun.

There is an excellent hospital attached to the English legation, under the control of two military attachés, Eurasian surgeons, belonging to the Indian army. Both are men of culture and ability, and are doing a good work amongst the people, who are otherwise neglected medically and surgically.

During our stay at Muscat I was called upon to attend professionally on the sovereign. I found him suffering from partial paraplegia of long standing, with an annoying enuresis and other complications.

Muscat is a place in which neither special nor general liberty can be given. During the hotter months the climate is a sufficient reason, but the principal objection is the fact that there is no enforcement of municipal law, and all classes of the inhabitants go armed for personal protection. The Arabs especially are walking arsenals, and besides pistols and rifles carry a long double-edged sword, which they wield with great effect. It is true that there is a pretense of a military police and a night patrol, but no one in the service of the sovereign can be trusted to perform any duty honestly. Under these circumstances, with every one armed, brawls, with serious wounds resulting, are very common, and drunken seamen would probably meet with many unfortunate or fatal accidents among these people, with their hatred of Europeans personally guarding and defending their own interests.

There are no prevailing diseases peculiar to Muscat, if we except muscular rheumatism, which is very frequently encountered. This is probably due to the refrigeratory process of sprinkling the naked body with water, so commonly practiced during the sultry nights of the hot season.

PERSIA.

April and May, 1883.

Bushire, Lingah, and Bunder Abbas, the three cities of Persia visited by the Juniata, are situated on the eastern shore of the Persian Gulf, in the province of Fars, which includes most of the southern portion of the kingdom. This is described as embracing the Gamsir, or hot district, the lowlands stretching along the coast of the Persian Gulf, and extending to the base of the mountain ranges; and the Sardsir, or cold region, the elevated table-lands reached through the mountain passes. Over these regions, outside of the cities, with their composite population, wander the Ealiats or nomads, with their tents and flocks—a distinct race from the dwellers in towns, locating themselves in highland or lowland, according to the season.

The winter climate is not very cold along the eastern coast of the Persian Gulf, though the winds are sometimes piercing. During the summer the heat is excessive, and the north wind, or shamal, dry and laden with dust, or the southerly wind saturated with moisture, render the season one of suffering. The average minimum temperature for winter is about 52°, and the maximum of summer, 100°.

The rainfall is small, rarely exceeding 8 inches, but is supplemented by heavy dews during the summer months. From the scanty rain, and the absence of any large rivers, careful agriculture becomes necessary, and skilled irrigation—in which the Persians excel—generally producing two abundant crops of rice, wheat, barley, and maize.

The mountains of Persia are of primitive rock, calcareous formations, and clay, with deposits of sulphur and salt, the latter forming glistening concretions upon the mountain faces. The uplands are noted for extensive saline deposits and salt lakes, and the lowlands are plains of clay and sand, often impregnated with salt also. But there is much fertile land, and in some districts a bountiful supply of water. Shirez is famous for its fertility, and the cultivation of tobacco, the vine, and the rose.

Persia is considered throughout its entire extent a remarkably healthy country. Remittent fever is, however, common on the gulf coast dur-

ing the moist winter weather, and there is the usual amount of ophthalmic troubles to be found in all eastern cities.

Epidemics of plague and cholera have decimated the population at long intervals, and the latter disease, with the small-pox, are always present in the chief cities during the hot season.

For fear of conflict with the fanatical natives, liberty is never given to the crews of English men-of-war while in Persian waters, the ships always going to some port in India for that purpose.

During the summer all drills are made as short as possible, awnings are constantly spread, and as much of the work of the ship as possible is accomplished before sunrise and after sunset. Neglect of these precautions has often resulted in death from sunstroke.

BUNDER ABBAS.

Bunder Abbas is situated on the eastern coast of the Persian Gulf, opposite to the once populous island of Ormuz. It stands at the head of a shallow roadstead, and occupies the beach bordering an extensive plain, with a background of lofty snow-covered mountains, Mount Buknar rising to the height of 11,000 feet.

The custom-house and official residence of the Sheik, located upon the beach, is a fine building, and the center of the city is well built up with decent houses of limestone, or rough concrete, glaringly white-washed; but the dwellings of the poorer classes are either constructed of mud or are huts of mats spread over a rude framework of sticks. Much of the city is inclosed within walls, surmounted by round towers; but the custom-house and bazaars, and all the modern portion of the city, are without the walls. The streets are narrow and filthy thoroughfares, and so are the bazaars, but much business is transacted here by the Banian merchants of India, in the various products of Persia, especially in rugs and carpets.

The population numbers 12,000, and is constituted like that of Muscat, with the exception that it does not embrace a single European.

The climate is noted for its excessive summer heat, when all who can fly to the mountains, and only return with the cooler weather of autumn.

During the firing of a salute to the American flag, from four ancient field-pieces, a bunch of burning rags, used for wadding, was blown against one of the gunners, who was most severely burned. The Sheik sent him off to the Juniata, where he received proper medical attention. Later in the day the Sheik paid an official visit to the ship, bringing in his suite a numerous train of afflicted people. Both for himself and his subjects he asked advice and medicine, stating that neither physicians or drugs were to be found in Bunder Abbas.

The island of Ormuz, immediately to the southwest of Bunder Abbas, was formerly the great emporium of eastern trade under the Portuguese, and its metropolis one of the wealthiest and most luxurious cities of the world. It is now a deserted waste, nothing remaining to attest its former wealth and importance but the ruins of large cisterns, sufficiently extensive and capacious to supply the former teeming population, and the ruins of a great fortification occupying a projecting promontory.

The island is a curious formation of rock and deposits of salt, sulphur, and iron, presenting a most picturesque appearance with its varied stratifications and its three pinnacles encrusted with glistening salt.

The population of Ormuz is about 500, mostly Arabs, engaged in the preparation of dried fish and sharks' fins, largely sold for export in the bazaars of Bunder Abbas.

Ormuz is famous as the spot to which the Parsees first fled after the Mohammedan conquest of Persia, subsequently seeking refuge in India. The importance of the island ceased with the discovery of the route to India by the Cape of Good Hope, and in 1622 it was finally captured by Shah Abbas the Great and his English allies, with which event its history ends, and that of Bunder Abbas takes its place.

LINGAH.

Lingah has a good harbor, and not a roadstead like Bunder Abbas, differing also from that city in having no portion inclosed within walls. It stretches along the beach as a bright white line, displayed against green groves of date palms, the snow-capped Ghauts rising in the distance. It is a stirring place, and ship-building is an especially active industry, being carried on upon a comparatively large scale, baghalows being built of from five to eight hundred tons burthen. It is also the point where all the business is carried on in connection with the Bahrein pearl fishery.

Lingah was once an important Dutch trading post, and the old, half ruined Dutch factory is now occupied as a custom house. A fort in ruins upon the summit of a neighboring hill probably dates from the same period.

The population embraces Persians, Arabs, Beloochis, Jews, Armenians, Africans, and Kurds, and is estimated at about 10,000. There are no Europeans residing here, the English Government being represented by a native of India.

Like Bunder Abbas, there are no physicians or surgeons here, and none but domestic drugs to be obtained, much suffering resulting often from this fact, especially from the absence of surgical attendance.

The vicinity of Lingah is a calcareous formation, and the soil of the vicinity is of a dazzling white, bringing into strong effect the green groves of the palm, which produce abundantly a most excellent date.

Excellent water is obtained from large well-built cisterns, placed in the bed of a small stream to the north of the city, which always afford an ample supply. These cisterns are covered with domes, and the water is cool, even in the hottest weather of summer. The hammam, or Turkish bath, is in common use, conducted in the same manner as in Turkey and Syria.

ABU-SHAHR.

Abu-Shahr (Bushire), on the northeast coast of the Persian Gulf, in the province of Fars, is the direct seaport of Shiras. It occupies the extremity of a long sand spit named the "Mashillah," and has a shallow harbor where vessels of light draught find good anchorage between two sand banks, but large steamers have to anchor a mile or more from the landing place.

From the sea the city is particularly picturesque, with its many houses of gray limestone and concrete, surmounted by wind towers, while in the distance are the ever present mountains covered with snow. A wall protects the city upon the land side, and defensive round towers are placed at equal distances along the line of the shore.

The badgirs, or wind towers, peculiar to Persia, often reach a great height, in one instance being built to a height of 90 feet, and are so constructed with flues opening to each point of the compass as to conduct currents of air into all the lower apartments.

The streets and bazaars are narrow, crooked, dirty alley-ways, roofed with mats. Most of the thoroughfares are paved, but at so ancient a date that a groove is worn by the continuous marching of caravans, and in many places they are obstructed with stone and brick, fragments of

ruined and deserted dwellings, said to be characteristic of all Persian cities. This is but one of the conditions of the streets, which beggar description. Filth abounds everywhere, and grave-yards are found at every turn, telling the story of plague, cholera, and panic, with hasty interment.

Most of the buildings of Bushire are mud hovels, but there are many well constructed houses, two or three stories in height, substantially built of brick or stone, and those of the wealthy are luxuriously furnished. The different stories are reached by outside staircases ascending from the interior court to balconies, and on the roofs are latticed rooms, in which the hot nights of summer are passed. The saloon, or living room, opens upon the court yard, in the center of which is generally a water-tank bordered with potted plants. In winter the only means of warming the apartments is a pan of charcoal, closed with a perforated covering.

The English residency is a large establishment, surrounding a double court, surmounts a bluff on the gulf side of the city, and the residence of the Dutch consul, adjacent, is also an imposing structure. The British resident, Colonel Ross, keeps up considerable state, and is protected in his position by a detachment of Bengal native infantry.

The Darya Béghi represents the prince governor of Fars, who resides at Shiraz, and occupies a fort garrisoned by a slouchy detachment of troops armed with percussion-lock muskets.

At the point where the telegraph cable is landed, seven miles from the city, a large force of telegraph employés, and the few European merchants doing business in Bushire, have formed a village of pretty villas. There is here also a supplementary residence, where the English resident and his numerous staff spend the hot months. A skillful physician and surgeon is embraced in the attachés, who has a wide practice in the city and province.

In the principal cities of Persia, European surgeons are held in high esteem, and are liberally paid. It is, however, necessary, in arranging for an operation, to insist on half the fee being paid in advance, and exact a bond for the remainder; also stipulating to be held blameless in case of an unfortunate or fatal result.

The population is probably about 35,000, embracing Persians, Arabs, Armenians, English, and Dutch. There is much business and considerable wealth, with much poverty as well, the streets being crowded with beggars, lepers, the deformed and blind, all clamorous for "pick-shish," the equivalent of the Turkish "buckshish."

The Europeans form a pleasant community, numbering several hundred, supplemented by the officers of the almost constantly present English gunboats.

The markets are not abundantly supplied, but, with ample notice, ships can be supplied with good beef and mutton, poultry, eggs, fruit and vegetables. Much of the produce, however, comes from India and Europe by regular steamers.

A most common article for sale in the bazaars is a cake composed of manna, flour, honey and almonds. The manna is obtained from the Tamarisk, exuding like dew upon the leaves, and is collected in the early morning by placing cloths beneath the shrubs and beating the branches.

The water supply is brought from wells some three miles inland, and is of excellent quality. The drainage and sanitation of the city are completely neglected.

Wool, wheat, opium, almonds, raisins, Persian carpets, and turquoise are largely exported from this port, and horses are sent from here to

India for the use of the army. Dried rose leaves and rose water, gum tragacanth, ammoniac, saffron, and assafoetida are embraced in the exports.

The poppy is grown in many portions of Persia—principally around Ispahan and Yezd—and at one time it was cultivated so extensively that cereals were neglected, and the famine of 1871 was attributed to this cause. The opium is exported exclusively to China and England, being especially valued in Europe for its large percentage of the alkaloid, while in China it is regarded as inferior, the addition of oil in its preparation giving it an objectionable character for the purposes of smoking. It is prepared for export by kneading it for a considerable period with sticks, and pressing it into long, thin, flat molds, producing a cake weighing about two pounds.

BASRAH.

April 25 to May 1, 1883.

Basrah (Bussorah, Busrah), in Mesopotamia, Asiatic Turkey, is reached by the Shat-el-Arab River, formed by the union of the Tigris and Euphrates, and emptying into the Gulf of Persia about 100 miles to the northwest of Bushire. It is a noble river, forming the boundary between Persia and Asiatic Turkey, nearly a mile in width, and is navigable for large vessels as far as Basrah, a distance of 80 miles. Its banks are one long date grove, with an occasional grain plantation or orchard, all intersected by canals, in which and along the river banks buffaloes and wild hogs are always wallowing. The anchorage on the Shat-el-Arab is off the mouth of a canal which leads directly to the city, a water highway constantly traversed by large baghelows and the smaller belems, carrying passengers and merchandise to and from Basrah and various points along the river.

At the mouth of the canal is the European settlement, where there are several large mercantile houses, coal piles, the English consulate and post-office, a native hospital, and the quarantine office of the International Sanitary Commission. Farther down the river is the admiralty residence, off which there are always several Turkish gunboats. The approach to Basrah through the canal is very beautiful. Along its banks are many fine dwellings, including the imposing residences of the pasha and Persian consul, date groves and orchards, and a constantly moving procession of people in gaily colored clothing.

The walls of the city skirt the southern bank of the canal, extending from which are extensive suburbs, consisting mostly of huts constructed of palm and thatched with the leaf of the banana. Barracks and kahns are found located along the canal without the gates, and the banks are constantly patrolled by Turkish troops.

To the canal the people come to bathe, to obtain water, to wash their clothing and household utensils, and to spread the carpet at the hours of prayer. At some points there are rude flumes, or troughs, into which water is poured to be conducted to premises at a distance, for household use, and the irrigation of garden patches. The whole day crowds are found at these employments, defiling the stream in every way, and at the same time filling and carrying away jars of water to be used for every domestic purpose.

Within the walls we find the usual labyrinth of narrow, unpaved streets characteristic of Asiatic cities, with structures of mud and brick, many of them pretentious and well-constructed buildings of two stories, alternating with hovels, and the usual amount of ruins.

The great bazaar is a fine structure of brick with a vaulted roof, and

its accommodations are very extensive; but it is a dark, gloomy, filthy place, a thoroughfare the whole day long for men, camels, and donkeys, laden with merchandise. Here, however, an enormous business is done, Basrah being the point where the exchange is effected for the whole valley of the Tigris and Euphrates between the products of these regions and those of Europe and other countries of the East and West.

The date crops is enormous, and the dried fruit is principally exported to India and America. Wheat is also largely produced, and the grain bazaar is a most interesting feature of Basrah. It is situated outside one of the principal gates, and the grain is displayed upon mats in huge piles under mat-covered sheds of great extent. Wool is also largely exported.

Basrah has a population of only 15,000 people, though its walls are eight miles in extent, and embraces principally Arabs, Turks, Jews, Persians, Armenians, and Greeks, with many Indian Banians, who fill the same office as at Muscat in all trade, being the brokers and exchange merchants. The Europeans are embraced in a French Catholic organization, and the merchants residing at the mouth of the canal, not more than twenty in number.

The alluvial bottom in which Basrah is situated is wonderfully fertile, and besides producing an enormous date crop, wheat is raised in such quantities that no market can be found for much of the grain, which rots in the storehouses or is used as fuel.

Almost every variety of vegetable is raised, and all semi-tropical and temperate fruits, the apricot and pomegranate being especially perfect.

The year is divided into a hot and cold season, the former extending from March to October and the latter from October to March. The cold season is also the rainy season, when snow occasionally falls and the temperature descends as low as 23°. The average rainfall is about 15 inches.

During summer fierce thunder-storms prevail, and the heat of the season is excessive, a temperature of 128° being often indicated. During this season the nights are spent on the roof, where dinner is served at a late hour. Numerous water-jars ornament the parapets of the roof to quench the constant thirst during the night. At daylight all go below, to remain in the ground story until after sunset.

Sanitation is conspicuous by its absence, and there are no sanitary regulations enforced in the city. All filth is thrown into the streets, and if it accumulates offensively is covered with earth, afterwards to be transported away at private expense and thrown into the canal. It is no uncommon thing to see human excrement exuding from crevices in the walls of houses, and, with urine, trickling down into the street.

The markets are well supplied with meat of all kinds, poultry, eggs, and fruit, all of excellent quality and cheap. During the spring months the river supplies a very superior fish allied to the shad. In the bazaars the most noticeable article of food is *ghee*, a clarified butter artificially colored so as to be of a yellowish-green hue. It takes the place of lard throughout the Gulf and Asiatic Turkey, as well as in India, and the bazaars are largely supplied from the island of Socotra.

Dates form the principal food of the people. Onions are largely eaten, and also a flour cake, similar to the tortilla of Mexico, known as the *chupati*.

Coffee and sherbet are the principal beverages, the latter being either simply sugar and water, or the same with fruit juices added. Arrack is the intoxicating drink, and the betel is universally chewed.

The diseases of Basrah are remittent fever, often complicated with hepatic abscess and other forms of malarial affection, which prevail

when the winter rains commence and at the time of their cessation in the spring, winter being the unhealthy season. Typhoid is rare. "Date mark" is very prevalent, and also ophthalmic disease, while small-pox, plague, and cholera—of which cases occur annually—at intervals assume an epidemic form.

Residence in Bagdad, or Basrah, or, in fact, in the valley of the Euphrates, is almost certainly followed by "date-mark," which generally lasts a year under native treatment, but in the few instances in which it is reported as occurring on board the English man-of-war Arab, its period was reduced to two months. It is often multiple, and commences as a papule, which becomes pustular, and subsequently a spreading ulcer, destroying the true skin, and after healing an ugly cicatrix is left, a great deformity when located, as it frequently is, upon the face. It is very obstinate to treatment, but after a long period shows a disposition to heal by the shooting up of profuse granulations, which must be constantly touched with *argenti nitras*. The English surgeons think that an early application of nitrate of silver, or nitric acid, to the primary papule may completely avert the local affection. The native treatment is simply soothing applications, a poultice of dates being the most common dressing. By Europeans it is treated according to the principles applied to indolent ulcers.

The cause of "date-mark" has been variously attributed to the eating of dates and fish and the drinking of river water. These, however, have been proven *not* to be the causes by very careful observation. The most notable investigation into the subject was made some years ago by an Indian commission of scientific men, who brought with them to Bagdad, a distilling apparatus. During the time of their stay on the Euphrates, they drank only distilled water, avoiding all the possible food causes, and otherwise exercised every precaution, and yet the result was that most of the members of the commission bore away a "date-mark."

Purulent ophthalmia is as common here as in other Eastern cities, resulting in keratitis, corneal opacities, staphyloma, &c. The bad results are due, in a great degree, to the use of tobacco infusion as a remedy. Flies, as usual, are considered to be the active agents in transmitting the contagion.

The native military hospital is located at the mouth of the creek in the European settlement. It has a capacity of 40 beds, and an occupancy of ten. Two surgeons are in attendance, and a pharmacist, with nurses and employés, according to the necessities of the sick. The furniture, attendance, food, and medicine seem to be up to modern standards, taking into account the character of the people under treatment. The surgeons are natives of the country, but educated in European schools. In Basrah proper there is a small excellently-conducted German hospital.

At the European settlement is also located the quarantine office of the International Sanitary Commission, guarding this gate-way to Europe, to prevent the progress of cholera, or plague, along this great highway.

The burial of the dead is made in coffins, for people of means, while the bodies of the poor are wrapped in cloths, and buried in deeply excavated graves.

Liberty is never given at Basrah from the English men-of-war, but on the occasion of our visit general liberty was given, with no bad results. The venereal diseases are said to be particularly virulent, and the cheap arrack, sold to the men, very pernicious in its effects. Our own experience was completely the reverse.

EXTRACTS FROM THE REPORT OF MEDICAL INSPECTOR N. L. BATES, U. S. N., ATTACHED TO THE U. S. S. LANCASTER, 1883.

Anchored below Cronstadt, 2 miles from the inner harbor. There is a large military, naval, and civil hospital in Cronstadt, capable of receiving 1,500 patients, and often crowded during the winter months. The medical and surgical staff was very large and the attendance complete and well arranged, but the buildings were not of modern construction; the arched ceilings were low, and the enormous stoves and double windows were an indication that, with full wards, the ventilation must be very imperfect. In the grounds there were pavilions of recent construction, for the reception of epidemic and contagious diseases. A few cases of typhus were in the wards. This hospital receives patients of all classes and all forms of disease.

The surgeon-in-chief was a naval officer, and nearly if not all the entire medical and surgical staff, thirty or thirty-five in number, belonged to the navy.

A paymaster has his office in the building and attends to the messing and other material wants of the patients, with a corps of subordinates.

Vessels of the navy, fitting for sea at Cronstadt, received their medical stores from this hospital, and a portion of the building was devoted to outfitting purposes.

During our stay at Cronstadt, I sent some patients to a small British hospital, which is maintained by an incorporated commercial company, and the dues collected from British seamen. It contains about 25 beds, is kept admirably clean, and the patients which I sent there were thoroughly well cared for.

Patients from the merchant marine of other nations are admitted on the payment of about 50 cents a day. Even in the busy summer season the hospital is never crowded and, of course, is almost or entirely empty during the long winter.

At none of the ports visited was there any epidemic disease at the time of our visit. Cholera, at one time greatly feared, did not cross the Mediterranean as an epidemic, and the strict quarantine which was generally enforced during the summer, was relaxed in November. The precaution was always taken to obtain a bill of health, viséd by the consul of the country which we expected to visit. This, as a general rule, is advisable, and especially so for the French, Spanish, and Italian ports.

There were seven cases of pneumonia in this quarter. The first was admitted at Genoa, four more at Villefranche, one on the passage to England, and one at Havre. They were not sufficiently accounted for by any exposure, were asthenic, with tendency to death by steady extension of effusion and consolidation.

The last case of the quarter, a colored boy, died with double pneumonia, involving all but the apices of both lungs. One case, convalescent at the time, was left in hospital at Villefranche when we started for England, as on account of an apparent predisposition to phthisis it.

was deemed dangerous to take him north during the winter months. One case occurred in a man fifty years of age. The others were all young; several of them apprentices. All were men of good habits; none of them hard drinkers.

During the second quarter there was one case of erysipelas and one of pneumonia. The tendency to pneumonia seemed to entirely disappear, but at one time I feared an outbreak of cerebro-spinal meningitis. A man named Lynch was taken suddenly and violently ill with meningeal symptoms. There was no history of any exposure to any endemic or epidemic influences, and no symptoms other than those of idiopathic meningitis. When he had sufficiently improved to justify his removal I transferred him to the British hospital in Cronstadt, where he continued to improve to such an extent, in fact, that when we left Cronstadt I took him on board and considered him out of danger. The noise disturbed him greatly, and after a few days he became manifestly worse, so that when we arrived in Copenhagen I at once put him in the civil hospital at that place, where he died some ten days after our departure. A few days later one of the musicians died after a short illness with well-marked cerebro-spinal fever. Although there were no other cases, it was no unusual thing for patients to complain of intense headache, and a month later a patient who had ultimately a severe case of typhoid fever, for the first five days had intense headache and other symptoms of meningeal trouble. As the abdominal symptoms developed, the head symptoms disappeared and a correct diagnosis became possible.

In the third quarter one case of pneumonia, ultimately fatal, was admitted. The consolidation involved both lungs, and death was by heart failure. In the fourth quarter one case was admitted and discharged to be readmitted with phthisis pneumonica chronica.

In regard to a case of typhoid fever with meningeal symptoms. This patient probably contracted the disease in Hamburg early in August, and it was developed on our way to Villefranche. After we arrived he was put in the hospital, and during our stay attended by the medical officers of the ship. After our departure Passed Assistant Surgeon Magruder attended the case. On our return November 25, he was convalescent, but only fit for light duties.

Late in September appeared among the inhabitants of the older part of Nice, in the barracks and among the workmen employed on the Exposition buildings then in process of erection, typhoid fever. Up to the middle of November, there were in a summer population of perhaps 60,000, between 250 and 300 cases of typhoid fever with 45 deaths.

After the heavy autumn rains the disease almost entirely disappeared, and since the cold weather there has been no more than the usual number. The part of the city to the west of the Arc de la Gare, on the sea front, almost entirely escaped, and the quarters occupied by foreigners during the season have been generally healthy.

The increase in the number of cases of typhoid fever aroused the apprehension of intending visitors, was noticed in the public journals, and in connection with other causes served to make the season unusually dull so far as numbers were concerned. The authorities of Nice, in view of this fact, and the attacks which have been made against the sanitary condition of the city, have determined to employ a commission of engineers to determine what ought to be done.

I attribute the increase in this disease last autumn to an increase in the number of troops and laborers, with a correspondingly crowded condition of quarters, to the late appearance of the fall rains, and to want of care as to cesspools and sewers.

I do not think that any fault can be found with the water supplied for drinking purposes. The supply for Nice, Villefranche, Beaulieu, and Monaco came from a spring, Sainte Thecle, in the hills, 5 miles back of Nice. This water is hard from lime salts, but has always been considered wholesome, and has been taken on board our men-of-war for many years. As no disease has occurred from this source and it has never, so far as I know, been suspected of mischief, the water supply may be excluded so far as purity is concerned. The quantity has not been sufficient for flushing sewers and drains. Several of the Nice sewers have but slight inclination, and in dry weather they cannot be cleansed, and occasionally become blocked. In some instances sewers receive the overflow of cesspools, in others, although contrary to police regulations, there are connections between kitchen pipes and sewers. A large building intended for a casino, built on arches over the bed of the Paillon, is to contain a theater, assembly and club rooms, a restaurant, cafés and shops, but it has no sewer, and the almost dry and gravelly bed of this sometimes river seems to have been thought sufficient for all drainage purposes. Several hundred yards below the casino the Paillon empties into the sea, but it is in the very center of Nice, and in close proximity to the public garden and prominent hotels. If allowed to be used in its present condition, it can be but a question of time when the casino or some point below it shall become a focus of disease.

The waters of the Eusebie have, within a few weeks been introduced into Nice, making a much larger supply available. It is important to note that the water supply is controlled by a company and all water used in apartments and hotels is measured and paid for.

**EXTRACTS FROM THE REPORT OF SURGEON JOHN C. WISE, U. S. N.,
ATTACHED TO THE U. S. S. NEW HAMPSHIRE, 1883.**

Since the last report improvement has been made in the lighting and ventilation. On the orlop 16 square ports, 20 by 24 inches, have been cut. With hatches down and ports closed the air on the decks, however, becomes offensive; this is especially the case at night and on those days when bags or bedding is being inspected. An additional cause in poor ventilation is a deficient heating apparatus; the position of the boiler-house on the spar deck, and an ill-directed distribution of the steam-pipes, accounts for this difficulty. In cold or damp weather, instead of having sufficient heat to warm a due supply of fresh air, the inlets must be closed to maintain the temperature, and the air soon becomes vitiated; this is especially true in the sick-bay, less so on the lower gun-deck, where a large galley serves to warm and circulate the air. The after-port of the orlop is unduly heated as well also as the brig. On one occasion I found the temperature there to be at 9 a. m. 101° F. Wrapping the pipes has in a measure relieved this trouble. Storm windows have been put upon the two gun-deck ports, and serve to maintain the temperature.

I would recommend the addition of canvas shoes to the outfit for use in summer, which while allowing free play for movement and growth, would prevent a large number of admissions for splinters and contusions. The white duck cap, made after the pattern of the blue one in use, is an insufficient winter covering for the head; those issued have been very poorly made, and after washing become very unshapely. Whilst an excellent thing in its place, the white-duck or working suit, worn constantly as it is (if we except Sundays), necessitates an unusually large amount of washing, and is by no means cleanly then.

The method of washing clothing is very objectionable. The piece is laid on deck and the washer kneels, sometimes with another garment under his knees, oftener with nothing, the result in either case being that the lower limbs are kept wet during the washing period. The washing is done below deck, where the temperature is about 65° F. Out of this temperature the apprentices go on the spar-deck to ship on their clothes, where the temperature is usually well below freezing. The result is inevitable sickness.

It is now contemplated placing stationary wash-tubs under the fore-castle. A drying room is suggested. Out-of-door drying, with a temperature below freezing, is practically impossible, and the clothes are often of necessity stowed away or worn damp.

In my opinion, the most decided cause of disease in winter is the custom of washing decks in bare feet, or shoes which are worn all day. The majority wisely choose the former alternative, though it is not at all uncommon to see shoes whitened by the salt. Boys attend the call for those under treatment with shoes and socks thoroughly wet from this cause.

The water supplied is by no means such as it should be, as it contains an undue amount of organic matter and abounds at times in daphniæ

and other entomostraceans. Last summer the water was boiled, with benefit, and a filter improvised. In a short time the filter became so impregnated with impurities as to emit a foul smell and impart a bad taste to the water. Should the Newport City water be continued as a source of supply it should be carefully filtered, especially in summer. Roaster's Island supplies excellent water and would seem to be the resource for the future. It appears from good authority that filtration does not remove specific germs, though spongy iron is said by Dr. Frankland to render the naturally dirty water of Antwerp quite pure.

It is well to notice here several matters bearing on the health and efficiency of the apprentices.

The wooden chutes, whose removal was so strongly urged last year, still remain, and, despite all efforts at flushing and disinfection, are in warm weather a steady menace to the general health. It is believed that this was a cause, principal or auxiliary, in the production of dysentery and diarrhœa, which prevailed on board last summer.

A matter which needs careful consideration on this ship is that of individual air-space, and the number of persons allowed should be far short of crowding. This ship may be looked upon as a dwelling of four stories, and hygienists are well aware how each story increases the difficulty of sanitation; here, too, these stories, or decks, are used as dormitories, and there is no adequate ventilation.

Efforts are being made so to systematize the examination (physical) of apprentices as to prevent the transfer of those who are not at a proper standard of health. It cannot be presumed because an apprentice has not been on the sick-list that he is in good health; for many reasons, disease and injury are concealed, rendering an examination at the time of transfer necessary. This custom is pursued here with great benefit to the Government and the apprentices.

The impression prevails among some of the officers that the routine drives the apprentice unduly. What is the routine?

All hands are called at 5.30 a. m., and from then until 7.45 a. m. are occupied in scrubbing clothes, cleaning ship, and inspection; turn to at 8.30 a. m., when cleaning bright-work and preparation for quarters engage the time until that formation at 9.20 a. m.; then drill until 10.30 a. m., recess of 15 minutes; drill until 11.45 a. m., recess of 15 minutes; dinner at 12 m.; turn-to at 1 p. m.; drill from 1.15 to 2.15, recess of 15 minutes; drill from 2.30 to 3.30; from this time until 5.30, when supper is piped, there is a recess or general work, such as coaling and provisioning, hoisting boats, drying down decks, &c.; from supper until hammock at 9 p. m. is a period of relaxation. Thus of sixteen hours, we will say, one of hammocks, between six and seven are occupied as intermissions, periods of rest, and meal hours. This is liberal enough; yet two facts should be remembered in regard to the winter life, and they are, that with few exceptions the work is accomplished between decks, where the air is close, and that the recreation, is as a rule, on shipboard, and that there is very little change in the monotony or little distraction or relief for the mind. Whenever the weather is not severe, Wednesday, Saturday, and Sunday afternoons, should be passed on shore. There is a great lack of this excellent means of keeping up the spirit and recreating the mind.

After a lengthened experience on the training service, I am more firmly than before of the opinion that the minimum of age for admission is too low, and urge that it be raised to fifteen years.

Punishments awarded by the commanding officer have leaned greatly toward moderation. While as senior medical officer I have testified to

the ability of minors to undergo long periods of solitary confinement (30 days), I question the advisability of a resort to this extreme sentence, save in cases of a more refractory nature, and consider it capable of working serious consequences, of a psychical more notably than a physical character, when employed as a punishment for those of immature mind.

The excellent results attained in the English service from "birching" is worthy of consideration, effecting a wholesome regard for discipline with the least possible detriment to the physique.

The average ship's company for the year was 388; the time lost by sickness was 3,428 days, 2.41 per cent. The following is a synopsis of disease according to the nomenclature:

System.	Sick-days.	System.	Sick-days.
Zymotic diseases.....	299	Digestive diseases.....	569
Constitutional diseases.....	204	Genito-urinary diseases.....	144
Nervous diseases.....	108	Locomotive diseases.....	96
Diseases of the eye.....	18	Integumentary diseases.....	511
Diseases of the ear.....	10	Absorbent diseases.....	10
Diseases of the teeth.....	9	Poisons.....	18
Respiratory diseases.....	357	Violent diseases.....	918

It will be noticed, that violent diseases furnish the largest ratio; of these, incised wounds furnished 296, contused wounds 119, lacerated wounds 42, punctured wounds 84, and burns 113 sick-days.

**EXTRACTS FROM THE REPORT OF PASSED ASSISTANT SURGEON
L. B. BALDWIN, U. S. N., ATTACHED TO THE U. S. S. PENSACOLA, 1883.**

MADAGASCAR.

Tamatave, Madagascar, latitude $18^{\circ} 09' S.$, longitude $49^{\circ} 23' E.$, is the principal commercial port of the island and the sea-port of the capital. We arrived on the 18th of January and remained until the 25th of January, 1884. The anchorage is a large roadstead, furnishing good "holding ground" and protected by reefs, though exposed to wind from the east and north. The part of Tamatave occupied by foreigners is built upon a point of land extending into the sea and joining the main land with the long and massive coral reef, over which the sea during our stay continually broke in a heavy surf. This tongue of land is only about 400 meters wide and presents a surface diversified by a number of small hills 6 to 10 meters high. From our anchorage the shore appeared covered with brushwood, rushes, and grass, with here and there a pandanus, or a tall cocoa palm, while at a distance of 5 to 8 miles, beyond a low, level, invisible plain, with swamps, became visible the first of the mamella-shaped hills, which, increasing as the eye carried one inland, reached a height indicating the lofty mountains, which are known to extend nearly the whole length of the island, from Cape Amber in the north to Cape St. Mary in the south, about 950 miles.

A French medical officer and lieutenant, who came alongside from the French flag-ship, and on being informed, in answer to their questions, that we "were all well and 27 days from a healthy port," but had no "patente de santé," said it would be necessary to fly the quarantine flag for three days. It has been the custom to inquire especially in regard to the quarantine of ports to be visited, and that I had positive information that the Hovas had no quarantine regulations, except against Mauritius, in times of epidemics. On the 21st January the medical officer again came alongside and granted "pratique," after 70 hours' quarantine.

Direct communication with English men-of-war and French ships was granted; also, to have the United States consul on board, as well as any Europeans from shore, French boats alone being used for the purpose. No fruit or provisions of any kind to be procured, if we except a few limes and bananas. Three French men-of-war, with one transport, and an English man-of-war comprised the vessels in the harbor. The French have about 500 troops on shore, 150 of whom are creole volunteers from Réunion. They are said to have suffered greatly from dysentery and malarial fevers. The transport is now used as a hospital ship, and the worst cases are sent to Réunion about once a month, also to a temporary hospital at Nosibé, but the latter appears not to have been successful. They appear to get very little provision from the country, but are obliged to import nearly all their supplies. They now use water distilled on board ship for their men, and they are having much less dysentery and fever in consequence. Before the bom-

bardment in June, 1883, the foreign population numbered about 3,000, many of whom have since gone to Mauritius and Bourbon.

There are no hospitals in Tamatave, and only one civilian physician at present. They use cistern-stored rain-water for drinking, the well water being inferior, and it is believed causes malarial fever. Sanitation, as elsewhere, in Madagascar, is almost unknown; swamps, mud pools, heaps of decaying vegetation, and refuse generally, rotting in the heated air, no doubt have much to do with the fevers and other diseases which are known to be so prevalent here, and among the people of the coast districts. The offensive swamp odors brought off to the ship with the setting in of the land breeze were most oppressive, and noticed by every one. Line fishing from the ship was a complete failure. It was said that two or three kinds of edible fish could be caught near the reef, but were not very abundant, and that care was necessary to avoid several kinds known to be poisonous, existing among the reefs and rocks near the shore. Four persons were said to have died quite recently from eating fish caught near a sunken wreck.

On the 25th of January, we anchored off Fenoarivo or Fenerive, latitude $17^{\circ} 23'$ S., longitude $49^{\circ} 29'$ E., 57 miles north of Tamatave. There is an open roadstead and miserable landing to a small unimportant town. It is the residence of a native governor; here for the first time we found the Hova flag and met the native races. At this point the hills approach the coast and present a fine green appearance, well suited for grazing. During our stay free communication was had with the shore during the day, but no one remained over night; and here was obtained our only personal experience of Madagascar and the Malagasy, in itself so limited as to be sufficient excuse for these incomplete notes.

Rice is the "staff of life" to the Malagasy, and forms the bulk of every meal. Its culture occupies the greater portion of the time of every part of the community, and the system of cultivation is by terrace irrigation.

The people formerly made a kind of coffee from burnt rice, but now they use coffee and tea, both of which are cultivated on the island. A native rum, or arrack, called "toaka," which is said to be a vile, coarse, fiery spirit, is made from sugar cane and sold very cheap. They are very fond of alcoholic drinks, and at times, supplied freely from Mauritius and Bourbon, has produced much drunkenness and debauchery.

"Ombe" is the name for cattle both wild and tame; the former are said to have straight backs, like the ox of Europe and America, but the latter belong to the zebu or buffalo species, having the hump between the shoulders. This hump is highly prized, and no superior breed would yet be welcomed for fear their own might be thereby deteriorated. These cattle are large horned, large boned, and not usually well covered with flesh. They are fattened about the towns in a pit or "fahitra," which is somewhat larger than the animal and a little deeper than the tips of his horns. A thatch is sometimes placed over it, and the food—wet grass, Indian corn, or sugar-cane—is placed upon a ledge or rude sort of a rack cut out of the clay sides of the pit. They are made to stand with the forelegs at a higher level, throwing the weight of the body upon the hind quarters. Hides are among the principal articles of export. Beef and poultry of all kinds are abundant and cheap. Mutton scarce, poor, and lean. Potatoes and pumpkins, but few garden vegetables, were to be obtained. Tobacco grows wild as well as cultivated. It is used as snuff, dried, powdered, and mixed with salt and ashes of sweet-scented plants. It is not applied to the nostrils, but to the mouth, by first placing a

ch in the palm of the hand, then, by a jerk, tossed and deposited between the lower lip and gums. Smoking of hemp-seed is illegal and not practised to any great extent. Clothes are washed in the streams or pools in the rice grounds, or beaten upon a flat, smooth stone at the water's edge, using a dark, unpleasant-looking soap of native manufacture.

The Betsimisarakas, or people belonging to this part of the coast, occupy also the two lower terraces of the entire east coast. They are a sturdy, robust, and athletic people, doing most of the labor. Those I saw were well formed, stout, and active, rather above middle stature, short necks, well-formed chests, muscular limbs, giving a firm gait, and the complexion of a rich brown. The men are fairly good looking, the women far from handsome, but their foreheads appeared as high as those of the males and as broad, the face rather round than oval; their eyebrows were well marked and slightly arched, over the eyes, and though not large, were clear and bright; the nose small, and often rather flat than otherwise; the mouth often large, with full lips slightly projecting above a well-shaped chin, and large pearly white teeth were general. The top of the head of both sexes is round and full, the hair jet black and glossy; is sometimes crisp and curly. I saw no gray hairs; they are said to pluck them out, always wishing to appear young. The hair of the men was cut short like a European, but the mode among the women can only be defined as being braided for two or three inches, and two or three of these round ball braids or knots hanging down on each side, giving a stiff formal aspect to the head and face. The men were mostly dressed in their native picturesque costume, a "salaka" or skin cloth, and the graceful "lamba"; the women in colored cotton dresses and lambas. The appearance of ill-fitting and uncomfortable clothing of European form was noted, but it lacks the grace and comfort of the native garb.

The Hovas, their conquerors and present masters, are more active, intelligent, and enterprising. Many of them have high foreheads, and many marks of development supposed to indicate intellectual capacity. The olive tinge of complexion is general with them, though very dark Hovas with straight or frizzly hair, and features resembling the European type, are said to exist without approaching the negro type. The eyebrows are well defined, and the eyes, though never large or projecting, are clear and bright; the nose frequently aquiline and firm, rarely sick and fleshy, though sometimes straight, short, and broad, without illness at the tip; lips usually slightly projecting, though seldom round and large. The men wear their hair cut short, and the women usually plaited in extremely fine braids, and tied in a number of small knots or bunches all over their heads. These Hovas hold the entire central plateau and the flanks of the southern extremity. They claim sovereignty over the entire island, and while they have been the dominant tribe during the present century, in all probability the Sakalavas would be the rulers of Madagascar had not circumstances put superior advantages into the hands of the Hovas. These Sakalavas are admitted to be the finest race physically, and their quick, intelligent, and lively dispositions indicate great mental ability. They still hold the broad plains of the west coast in all its length, and overlap the upper extremity of the northeast coast. Many of them do not acknowledge the Hova rule.

Leaving aside the Kimos, a race of dwarfs a meter high, and perhaps the Vazimbos, accredited without much authority with being the original people of the island, there is no longer much doubt but that the

Malagasy are allied to the Malayo-Polynesian race, and that the origin of all the many tribes was the same, though perhaps, by two or three waves of immigration, separated by considerable intervals of time. There is a mixture of tribes, races, and nations now going on in the island making it difficult to isolate the types, and the most convenient classification is into the "dark" and "fair" tribes.

The Mission Hospital is one of the largest buildings in the capital, commenced in 1864 and opened in 1865, two stories in height, 30 meters long and 10 broad, and constructed almost entirely of sun-dried brick, plastered externally. Has a good location on the brow of a hill, having a large piece of ground in front, and kitchen and offices behind. Has accommodations for fifty patients, and consists of two long wards extending the whole length of the building, one on each floor. Each bed is screened off by light, movable, wooden framework, covered with chintz, and allowing free circulation of air throughout; sashes to the windows, and the ground floor tiled; in the rear a projection containing a staircase. Dispensary is below; an operating and consulting room above. A large dispensary service is held daily, and a number of natives receive two hours' instruction daily in medicine and surgery from the European physician in charge. One year more than 1,500 were prescribed for, and 450 admitted to hospital, with a yearly average since 1865 of over 500 patients. The British Pharmacopœia has been here translated in the Malagasy language, as well as various works in other departments of medical science. Several natives, who have been educated in Europe and taken medical degrees at Edinburgh, are now practicing in the island. The medical botany of the island is known to be rich, and the native domestic remedies and poisons are said to be very numerous, but as yet very little investigated by Europeans. A great deal that we know of the diseases of the Malagasy is due to Dr. Davidson, who resided many years in the island and contributed valuable journal articles upon the subject.

Tubercular leprosy is rather common, and steadily on the increase. It presents the usual three forms—spots, tubercles, and ulceration or falling off of the members—and does not materially differ from the classic descriptions. Its hereditary nature is accepted, and careful inquiry will in almost every case establish the existence of a transmitted taint. While leprous persons were excluded from society the disease was kept within bounds, but since this salutary regulation has been suffered to fall into disuse leprosy has spread to an almost incredible extent. It is found indifferently among all the tribes, in all ranks of society, and in every part of Madagascar. It is said that lepers were at one time buried without any funeral ceremonies, and in some uninclosed place, or again, like some criminals, denied burial, and their bodies left to be eaten by dogs. Insanity is rare and suicide exceedingly uncommon. True dysentery is rare, and neither typhus or scarlatina has been seen in Madagascar by Dr. Davidson. Phthisis is prevalent, acute bronchitis is rare among adults, and acute rheumatism is not common. Worms, especially lumbricoides, are almost universal, and tape worm is frequently seen. Skin affections abound, and venereal diseases are dreadfully prevalent and destructive. A very fatal epidemic of variola decimated thousands in 1877. The warm moist heat of the beginning of the rainy season brings on disorders of the liver and stomach, while the warm dry weather before the fall rain favors the development of typhoid fever, cholera infantum, diarrhœa, and fatal serous inflammations; but it is the miasmatic fever which prevails at certain seasons of the year, especially near the coast that is the most fearful malady to

which they are liable. The earliest accounts of the French and Portuguese settlements on the coast represent the fever as a frightful scourge, causing the death of most of their soldiers. A great portion of the highlands of the interior are free from the ravages of the fever, though there are districts where it is very fatal, and there is said to be a tract of land northeast of Antananarivo to which criminals are sometimes banished, and where they seldom live long in the pestilential air, but are carried off by the fever within a few months after arriving in this "valley of the shadow of death." But the coast has always been very unhealthy for foreigners, though perhaps often aggravated by their intemperance, dissolute habits, and neglect of ordinary hygienic precautions; yet the Malagasy themselves from the interior or other parts of the country are equally subject to the fever as foreigners, unless "vitatázo, *i. e.*, fever proof or acclimated. The rivers mostly communicate with the lakes, and during the rainy season great quantities of decaying vegetable matter are brought down from the forests in the interior; besides, the large extent of swamp and marsh on these extensive plains bordering the sea give rise to a malaria, which is the undoubted cause of this much dreaded Malagasy fever, with its cold fits of shivering and alternate profuse perspiration, eventually producing a malarial cachexia almost impossible to eradicate; for those living far from the coast or in other countries have relapses in rainy, hot weather, many years after leaving Madagascar.

The natives have no effectual mode of treatment, but rely upon producing free perspiration with herbs. Quinine has been found almost a specific, and it is to be noted in this connection that the cinchona has flourished by experiment in many parts of the island, and that lately it is claimed an indigenous species has been discovered. Although our stay was so short we had seven cases, attributable to the malarial influence at Madagascar. They were mild in type and quickly yielded to quinine and change of climate.

Madagascar, extending from 12° to 26° south latitude, lies chiefly in the tropics, and on the level plains of the coast the climate and vegetation partake of a tropical character, while the plateaus of the interior, being 1,500 to 1,800 meters above sea-level, have a temperate climate, due to insular position, and are credited with being remarkably healthy. The southeast trade-winds, blowing most of the year over a large extent of the island, bring cool currents of air from the southern ocean, while the dense forests covering the mountain ranges have a no less powerful effect upon the climate by attracting the moisture of the atmosphere, producing cloudy skies and preventing rapid evaporation from the earth's surface.

As in most tropical countries the seasons are most conveniently divided into two: The rainy season, which is also the hot season, and lasts from November to April; and the cool and dry season, lasting from April to November. While the amount of rainfall is large and the heat excessive during the summer months, it is a mistake to imagine either continuous; we experienced, all considered, fine weather at this season, and such intervals may be expected. The morning and forenoon were generally fine, the rain coming on in the afternoon, rarely before 4 p. m., accompanied by thunder and lightning, and continued at intervals throughout the night. Very little rain falls, I am told, during the dry season; now and then a rain, but occasional drizzling showers are alone expected, and then is the best time for travelers to come upon this east coast or to visit the capital; that is, during June,

July, August, and perhaps September. The annual rainfall at the capital averages between 50 and 60 inches.

PORT ELIZABETH, SOUTH AFRICA.

This is the principal port of the eastern provinces of Cape Colony. The town, of about 15,000 inhabitants, is principally built upon a commanding eminence overlooking Algoa Bay, which is exempt from the northwest gales, but is exposed to the southeast winds. The general sanitary condition of the town was excellent. The town is well supplied with water brought from Van Staaden's River, about 28 miles distant. The corporation seems an active and enterprising one. The educational institutions are numerous: Grey's Institute, Diocesan School, Ladies' Collegiate School, &c. There is a good hospital, which, at the time of my visit, had 64 patients; the location is excellent, and the place well suited in every respect for the sick of our vessels. The weather during our stay was mildly temperate, corresponding with the latter part of August of our Middle States. They were then in great need of rain, and the general dearth of vegetation and absence of trees was everywhere noticeable.

**EXTRACTS FROM THE REPORT OF SURGEON A. M. MOORE, U. S. N.,
ATTACHED TO THE U. S. S. PORTSMOUTH, 1883.**

The change made last year by filling the spaces between the timbers in the bilge with cement has proved beneficial in preventing any sensible emanations, as well as by keeping the bilge water sweet and clean. This is an old ship, both as measured by the number of years she has been in existence, and by her antique construction as regards sanitary laws.

For the first few days out from Boston the cold was extreme, and there can be no question that had adverse winds detained us in that bleak region the consequences would have been disastrous to the health as well as the comfort of the crew. This experience has been given in order to emphasize the importance of providing these vessels with some method of heating by steam.

**EXTRACTS FROM THE REPORT OF ASSISTANT SURGEON W. G. G.
WILSON, U. S. N., ATTACHED TO THE U. S. S. PINTA, 1883.**

The United States steamship *Pinta* is a vessel of 306 tons burden, consisting of an iron hull and a wooden superstructure which is built on the original ship and covers in the entire deck area. With the exception of a small berth-deck forward, all the sleeping quarters are located within this space, which, from forward to aft, is divided as follows, viz: Main deck, engine-room, ward-room, cabin, and armory; within the latter are situated the dispensary and executive offices. The hull contains a small berth-deck, the fire-room and lower engine-room, orlop, store-rooms. Average complement 42, including 8 officers.

Ventilation.—In port, when the shutters are removed and all hatches open, the ventilation is excellent. At sea, in fair weather, except in the state-rooms, it is fairly good, with the use of windsails. At sea, in bad weather, with ports closed and hatches down, it is reduced to a minimum.

Berth-deck.—Is ventilated by four 8-inch circular air-ports, which, however, are closed at sea, and a hatch 4 feet 8 inches by 5 feet 8 inches. When the weather permits, the air is kept tolerably pure by means of a windsail.

Air space of deck	cubic feet..	2, 140
Number of men berthed		15
Air space per man	cubic feet..	142

Main deck.—This deck is ventilated by two large ports, each 5 by 4 feet, 12 smaller ones and a large hatch leading to the spar-deck. On this deck are situated the galley and water-closets for crew and officers. In fair weather there is free circulation of air.

Total air space	cubic feet..	5, 850
Number of men berthed		20
Air space per man	cubic feet..	292

Ward-room.—Owing to the fact that the state-room windows are closed by solid shutters when at sea, the rooms become close, and depend for ventilation upon the effect of currents produced in the ward-room country by means of windsails and two large hatches.

Total air space	cubic feet..	2, 847. 75
Number of officers		7
Air space per man	cubic feet..	406. 82
Each state-room	do	227

Cabin.—The cabin is large, light, and well ventilated. Air space, 2,250 cubic feet.

Armory.—Only two or three persons have duties to perform in this part of the ship. Air space, 700 cubic feet.

Engine and fire room.—Ventilated by hatches and flange-mouth ventilators.

Bilges.—The bilges in the forward of the ship are readily cleansed, but amidships and aft they are not so accessible, and foul collections are apt to occur in the extreme after end of the keel, which is hollow.

Light and heat.—The ship is well lighted throughout and, when necessary, can be heated by means of the galley, forward, and steam-coils, aft.

**EXTRACTS FROM THE REPORT OF SURGEON JOSEPH HUGG, U. S. N.,
ATTACHED TO THE U. S. S. QUINNEBAUG, 1883.**

Free Town is the capital of the British colony of Sierra Leone. It is built on rising ground, which slopes gradually up from the water to a plateau 400 feet high. The country surrounding it is composed of quite high hills, which are covered with dense foliage, and between them are low, marshy districts, which are fertile sources of malaria. The population of Free Town by the last census, taken about two years ago, is 21,000. The inhabitants are nearly all negroes, and represent a variety of the native tribes. The average number of whites is about 100. The market here is very good, fruits and vegetables being quite plentiful and of good quality. The water supply is derived from a mountain near the city, whence it is brought in pipes. It is very free from impurities and is of excellent quality. We used it while there, and filled our tanks with it on leaving, and suffered no ill effects from it. The average temperature is about 82°. Rains are heavy and almost continuous for six months in the year. The rainy season commences in June, and, after it has fairly commenced, malaria is abundantly developed in the surrounding marshes, from whence it is carried into the city by the land breezes. The place now becomes very unhealthy for whites, and indeed for all unacclimated persons. The fever resulting from this malaria is mostly of a remittent type and is very debilitating. Whites become acclimated with great difficulty. In most cases one attack of fever follows another, at more or less distant periods, until the person succumbs to the disease or is obliged to seek a more congenial climate. Most of those who have survived after a protracted residence, and consider themselves acclimated, have a pale, anæmic, and generally unhealthy appearance. With the exception of African fever, I heard of no disease which prevails very extensively in Free Town. Epidemics are of rare occurrence. They sometimes have yellow fever, but the health officer informed me that it is not a common disease and that it is always imported from some other place.

Both the visits of this vessel were during the dry season, and we found it very healthy.

Libreville, Gaboon River, is quite a flourishing French settlement. It is situated on the north bank of the river, a few miles from its mouth. The inhabitants are nearly all natives, and are the finest-looking negroes that we saw on the coast. There are said to be one hundred and fifty whites in the settlement. The number of the natives is unknown. The whites live on a road which runs along the river bank, while the natives live in huts, which are found in groups of six or eight, in small clearings in the midst of swamps and dense tropical vegetation. These villages, so called, are connected by simple paths through the woods; there are no streets, and the settlement is altogether quite primitive in appearance. There are two seasons, the rainy and the dry, the latter extending from May or June to September, when there is scarcely any rain, and the former including nearly all the rest of the year. The hottest period is in January, when the thermometer rises to between 80° and 90°;

the coolest is in July and August, when the average temperature is about 76° . During our stay of eleven days, in June, the average was 78.5° . There is the same scarcity of fresh provisions here as we found in Liberia. The water is obtained from the river. A boat goes up the river about 20 miles, above the limit of salt water, and comes back filled with muddy water, which is allowed to settle, and when clear is transferred to tanks on shore for use. We took it on board, found it very good to the taste, and suffered no ill results from its use. During the rainy season malarial fever prevails, but during the dry months the climate is salubrious; at the time we were there it was very healthy. About half of the crew had liberty there, going on shore in the morning to return at sunset, but we suffered from no fever or other climatic disease as a result of it.

EXTRACTS FROM THE REPORT OF MEDICAL INSPECTOR A. C. RHOADES, U. S. N., ATTACHED TO THE U. S. S. TENNESSEE, 1883.

I desire to repeat the recommendations of my predecessors, who have called attention to the necessity for introducing some good system of artificial ventilation, and the advisability of shellacking the berth-deck and not wetting it more frequently than absolutely necessary, selecting, when it must be done, days in which the humidity of the outside air is low enough to secure rapid drying.

As has been emphasized in other reports, the Tennessee is a damp ship, and the prevalence of boils, rheumatism, tonsillitis, and kindred affections is with great probability ascribed to the heat, moisture, and impure air of the lower decks.

The ventilation of the after part of the ward-room is very defective, the air here being usually so foul that it has an injurious effect on the health of those living in the rooms back of the after hatch. A ventilating shaft should be placed forward of the pantry, or, what would be better, admitting light as well as air, a hatch might be cut through the decks in this place.

The Ford punkah, which is worked by the donkey engine, has been used most of the time in the ward-room and steerages while in the tropics; it has a very beneficial effect in ameliorating the temperature and starting currents of air which assist in ventilation. I think the punkahs should be extended through the berth-deck in places where hammocks do not swing, and also into the sick-bay, where they would add greatly to the comfort of all the invalids in hot weather. The boiler for distilling water furnishes steam for running the donkey engine, which also works the steam-pump; hence the expenditure of coal in using the Ford fanning apparatus is small, and certainly should not prevent its employment on a ship like the Tennessee, where there is so much tendency to stagnation of the air on the berth-deck.

The holds and bilges are kept very clean, and there has been no bilge smell at any time when the steam-pump was working.

All the water used for drinking and cooking has been distilled aboard ship; it is of excellent quality, and as the allowance is sufficient there is no reason to desire any change in this respect. A wash-room for the crew should be made under the forecastle, and every facility given them for bathing frequently.

The clothing supplied to the crew was of good quality, but I would suggest that white merino underclothing be issued, and frequent inspections made to see that it is worn, especially on deck at night while in the tropics.

Caracas, the capital of Venezuela, having a population of 60,000, lies in a valley 3,070 feet above the sea, being in what is known as the temperate zone of the country. Several streams of pure water flow through and around the city. The drinking-water comes through an aqueduct from the river Catude, which is tapped for this purpose some distance above the town; it is distributed in iron pipes and furnished in suf-

ficient quantity at present, although the Government intends to build another aqueduct to supply the increasing demands of the city.

April, May, and June are the wet months, when most of the annual rainfall occurs; but there were showers every day while we were in the city, during the latter part of July, and, in fact, rain is rarely entirely wanting throughout the summer.

December, January, and February are the coolest and most pleasant months; but at no season is the temperature high enough to make the heat a serious inconvenience when one is not exposed to the direct rays of the sun, while the nights are always cool enough to make a light blanket agreeable.

In the University of Caracas there is a medical department, with chairs of anatomy, physiology, materia medica, practice of medicine, surgery, obstetrics, medical jurisprudence, and hygiene; and as efforts are being made to raise the standard for admission and graduation, the school is having a beneficial effect on physicians throughout the country. The university being closed on account of the general holiday for the centennial celebration while we were at Caracas, I was unable to see its practical working, and only make the above statement as given to me by a member of the faculty.

There are three hospitals in and around Caracas—the civil hospital in the city, the Hospital de Lazaro, one mile east, and the military hospital, a mile and a half south of the town.

The civil hospital, with fifty beds, is entirely free, being supported by the municipal government; it is dirty and badly ventilated, and the general appearance of the institution made me feel much pity for the poor patients. I could not hear of any place in Caracas where a stranger would be able to secure the attention and comforts required in serious sickness, unless he had sufficient means to command these in a hotel; and as the Venezuelans have a great dread of contagion, the possibility of being ill should always be considered by one thinking of visiting the city.

The Hospital de Lazaro, for lepers, stands on rising ground one mile east of the city, in the middle of a small farm belonging to the institution. It is one story high, forming three sides of a square, the male and female wards being separated by a building for administrative purposes. There are accommodations for eighty patients, two in each small ward, and at the time of my visit seventy-eight of the beds were occupied. When the friends of those affected with leprosy are willing and able to take care of them, they are allowed to remain at home, the people as a rule not believing in the contagiousness of this disease. The wards of the hospital are twelve feet square and fifteen feet high, with tiled floors and plastered walls; the ventilation, which is by doors and windows, answering very well in this equable climate. Everything about the institution was in good order, the evident attention paid to the comfort of the patients contrasting strongly with the civil hospital.

The market of Caracas is well supplied with vegetables and fruits of both the temperate and torrid zones; but provisions are dear, and there are few things, except some of the tropical fruits and vegetables, which do not cost more than in our large cities at home, while, as rents and servants' wages are high, the expense of living is greater than in most places of the same size in the United States.

The health of the city at the time of my visit was excellent, and I was told by physicians residing there that since the great epidemic of small-pox a few years ago there has been no widespread disease of any kind among the people.

**EXTRACTS FROM THE REPORT OF SURGEON W. H. JONES, U. S. N.,
ATTACHED TO THE U. S. S. WACHUSETT, 1883.**

An improvement in the ventilation of the after part of the berth-deck was effected by fitting two ventilators to the powder scuttles leading through the main deck, by which the closeness of that part of the berth-deck was much ameliorated.

The bilge in the after part of this ship gave much annoyance and discomfort from the foul odors that arose from it and penetrated the sleeping apartments of the ward-room and steerage officers, rendering them at times almost uninhabitable. The floors were taken up in the store-rooms and passage ways, where necessary, and in confined spaces, behind timbers, were found quantities of mud from decayed wood, chips, and other organic matters, mixed with grease from the engines, which gave out a most offensive odor, resembling what prevailed in the rooms. Closing and obstruction of the limber-holes allowed the collections to form, and had probably been accumulating since the ship was put in commission.

The mud and filth was removed, the floor scraped, then roughly washed, dried, disinfected with strong solution of carbolic acid, and afterwards whitewashed. The limber-holes were cleared and holes cut where solid obstructions had been placed across them. The floors were laid down loosely, where practicable, and in others the solid hatch-covers were replaced by gratings in the store-rooms, passages, and the deck above, with a view to facilitate ventilation of the bilge and prevent the retention and banking up of the foul gases that are always generated below to a greater or less extent, and thus forced into the sleeping rooms above.

On the passage to Valparaiso the officers and crew were vaccinated, in anticipation that they might be exposed to infection at the latter place, where small-pox had existed for several months.

Bovine virus (cones) from the New England Vaccine Company, procured on requisition at navy-yard, Mare Island, January, 1883, was used. Some of the cones were prepared July 9, 1882, and one November 26, 1882. Various methods were used to introduce the virus, but none of the cases showed successful results, not even in children.

**EXTRACTS FROM THE REPORT OF PASSED ASSISTANT SURGEON
H. L. LAW, U. S. N., ATTACHED TO THE U. S. S. YANTIC, 1883.**

Chief Engineer W. D. Smith, U. S. N., lately attached to this vessel, devised and has used on board an apparatus by which the water is conducted from the distiller to the spar-deck, exposed in brass troughs to the open air, where it is cooled, and then has a fall of twenty-four inches through a perforated iron box, where it is aerated and cooled before passing through a pipe into the tanks in the hold. This apparatus has served to provide cool and well aerated water, which has been very satisfactory to all persons on board.

**EXTRACTS FROM THE REPORT OF MEDICAL DIRECTOR R. C. DEAN,
U. S. N., UNITED STATES NAVAL HOSPITAL, NEW YORK, 1883.**

Since the last report was forwarded in regard to this hospital, important changes have been made, both in its internal arrangements and in its environment, which are believed to have improved its sanitary condition.

Placed on a hill considerably above the level of the main sewer into which the hospital drains debouch, it was formerly the point of escape for the foul air accumulated below, against the ingress of which no adequate safeguards had been provided.

The atmosphere of the hospital, which was once noticeably impure, seems at present entirely free from such objection. This salutary change is due without doubt to the new system of ventilation and drainage introduced during the past year. As this has already been technically described in former communications, I need not do more in this report than to cite its essential features.

1. The intercepting or receiving drain in the rear of the hospital has been tapped and connected with the tall chimney-stack of the engine-house, which is always heated, thus preventing any pressure of gas against the traps of the lateral drains which emerge from the hospital.

2. All the soil-pipes have been continued up above the roof, with undiminished caliber, and inclosed in shafts of cemented brick built in the angles of the hospital. These shafts also receive a number of accessory ventilating pipes, and are surmounted by ventilating cowls of galvanized iron.

3. Every basin, closet, sink, and bath-tub in the house has been carefully trapped and ventilated. In the water-closets the basins are made of a single piece of porcelain, including the trap, without joints or valves.

4. An independent ventilating shaft has been carried from the laundry in the basement through the roof.

5. Two large 42-inch Emerson ventilators have been placed above the wings of the hospital, at the head of the stairways, close to the doors opening into the attic, which are now of wire-work instead of solid wood. By this means the movement of the air from below upward is constant and independent of the windows in the wards and corridors.

In the principal wards and those most used the surface has been scraped from the walls and the walls washed with a solution of corrosive sublimate and newly kalsomined.

Fresh new mattresses, pillows, sheets, blankets, and bed-covers have been furnished to every bed in the hospital.

The floors of the corridors, both up and down stairs, have been thoroughly purified and newly painted.

The steam, which was formerly exhausted from the boiler and engine in the basement and from the kitchen and laundry into the sewer, from whence it found its way back into the hospital by various inlets, is now exhausted into pipes leading above the roof.

The improvement in the purity of the air in the hospital in consequence of these changes is very observable.

The filling up of the low and marshy grounds lying to the south and west of the hospital, so long in progress, is now completed; the space is inclosed by a high board fence, and grass has grown over much of the surface. This will naturally lessen the amount of the exhalations which in former years were thought to cause malarious affections around the site of the hospital.

In regard to the canal which lies to the north of the hospital, I am convinced that, in point of fact, its influence is favorable to the sanitation of the inclosure. It certainly serves as an excellent drain to the grounds, lying as it does far below the level, and, being flushed twice daily by the tide, no accumulation of injurious matter can take place in its bed. All the merchandise brought into it is promptly removed, and is not of a character to do harm.

The factories which have been erected in this vicinity are not, for the most part, of a kind to prove injurious to health, and the smoke from their chimneys is carried away by the prevailing winds without reaching the hospital.

I feel it to be part of my duty in making this report to call the attention of the Bureau to certain defects and objectionable features about this hospital, which could be easily remedied.

The laundry is in the basement just at the foot of one of the principal stairways leading to the wards. The clothing and bed linen of all classes of the sick are washed there every week, and the steam and infected vapors from them are disseminated throughout the building. Not only is this offensive to the senses, but it is not to be doubted that the germs of disease must be carried upward along with the impure vapor and produce injurious effects in certain cases which need not be specified. A ventilating shaft has been constructed to lead from the laundry to the roof, but it is much too small to be efficient in overcoming the whole evil. The laundry should be removed and placed in a detached building. This could be done at a cost of about fifteen hundred dollars, as mentioned in estimates already forwarded. The present mode of heating, although efficient, is unnecessarily expensive. The air passes into the hospital through tunnels, where it is warmed by steam coils. If the steam were conveyed directly to radiators placed throughout the building a much less amount would be required, and instead of the two large boilers now used one would be amply sufficient, and the consumption of fuel would be greatly diminished.

The kitchen should be provided with an upward outlet for the smoke, steam, and odors of the cooking, which at present often find their way throughout the building. The roadways which surround the hospital are paved with cobble-stones, and the noise of the many heavy vehicles which traverse them is very disturbing to the sick. They should be repaved in a smoother fashion.

Neither the wards nor the rooms for sick officers are provided with any means by which the patients can signal or call for an attendant, or make known their wants in case of emergency. Electric bells, if provided, would be of very great convenience and would not require much outlay.

I do not think the arrangements against fire are suitable or sufficient. The very heavy hose which is hoisted from the basement could not be managed by the present small force of employés. The large water-tank in the attic has long been disused and does not now enter into the provision for extinguishing fire. It is very desirable that the hospital

should be provided with fire-extinguishers easily managed by a few people, both those that can be carried by individuals, and one or two light perambulators which could be rapidly drawn along the corridors. A number of small glass hand-grenades (Hardin's fire hand-grenades) such as are in general use in all hotels and public buildings, would be a great safeguard here, as anybody can use them, and their contents are said not to be injurious when inhaled, which would be a great advantage in a place like this over the carbonic acid gas of the other systems.

I regret to say that it is quite impossible to keep the cemetery of the hospital in proper order with our limited force. It is overrun by marauders, who do whatever havoc they choose, and find ready access through the very open iron railing which surrounds without protecting the inclosure. I have made this a subject of consultation with the police force of Brooklyn, but they seem disinclined to render any assistance.

In this connection, I would respectfully suggest that it would be a great advantage and convenience, and one which would cost but little, to have the hospital placed in communication with the telephone system of the city and with the district telegraph office. A fire-alarm box could be located at the gate, and the telephone would give communication with the navy-yard, so that assistance might be obtained from both places in case of fire or other emergency requiring help from without.

At present the hospital is completely isolated and entirely dependent on our own employés, who are few in number, to control danger apt to arise at any time from the recklessness and depravity of the vicious class of people who constitute our patients.

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